



Microservicios

Laboratorio de CI / CD

Sesión 04



02 de julio del 2019

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INTEGRACIÓN Y ENTREGA CONTINUA

Pasos previos (Restauración de repositorio).

```
$ sudo -s  
# cd /etc/apt  
# cp sources.list.save sources.list  
# apt update
```

Instalación de Jenkins

```
#wget -q -O - https://pkg.jenkins.io/debian/jenkins-ci.org.key | sudo apt-key add -  
# sudo sh -c 'echo deb http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'  
# sudo apt-get update  
# sudo apt-get install jenkins
```

Pasos previos (Restauración de repositorio).

```
$ sudo -s  
# cd /etc/apt  
# cp sources.list.save sources.list  
# apt update
```

Instalación de Jenkins

```
#wget -q -O - https://pkg.jenkins.io/debian/jenkins-ci.org.key | sudo apt-key add -  
# sudo sh -c 'echo deb http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'  
# sudo apt-get update  
# sudo apt-get install jenkins
```

Iniciando Jenkins

```
# sudo systemctl start jenkins  
# sudo systemctl status jenkins
```

Output

```
● jenkins.service - LSB: Start Jenkins at boot time  
   Loaded: loaded (/etc/init.d/jenkins; generated)  
   Active: active (exited) since Mon 2018-07-09 17:22:08 UTC; 6min ago  
     Docs: man:systemd-sysv-generator(8)  
    Tasks: 0 (limit: 1153)  
   CGroup: /system.slice/jenkins.service
```

Agregando las reglas del firewall

```
$ sudo ufw allow 8080
```

```
$ sudo ufw enable
```

```
$ sudo ufw status
```

Output

```
● jenkins.service - LSB: Start Jenkins at boot time  
   Loaded: loaded (/etc/init.d/jenkins; generated)  
   Active: active (exited) since Mon 2018-07-09 17:22:08 UTC; 6min ago  
     Docs: man:systemd-sysv-generator(8)  
    Tasks: 0 (limit: 1153)  
   CGroup: /system.slice/jenkins.service
```


Iniciando Jenkins

Ir a la siguiente ruta: <http://localhost:8080>

Getting Started

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/lib/jenkins/secrets/initialAdminPassword
```

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

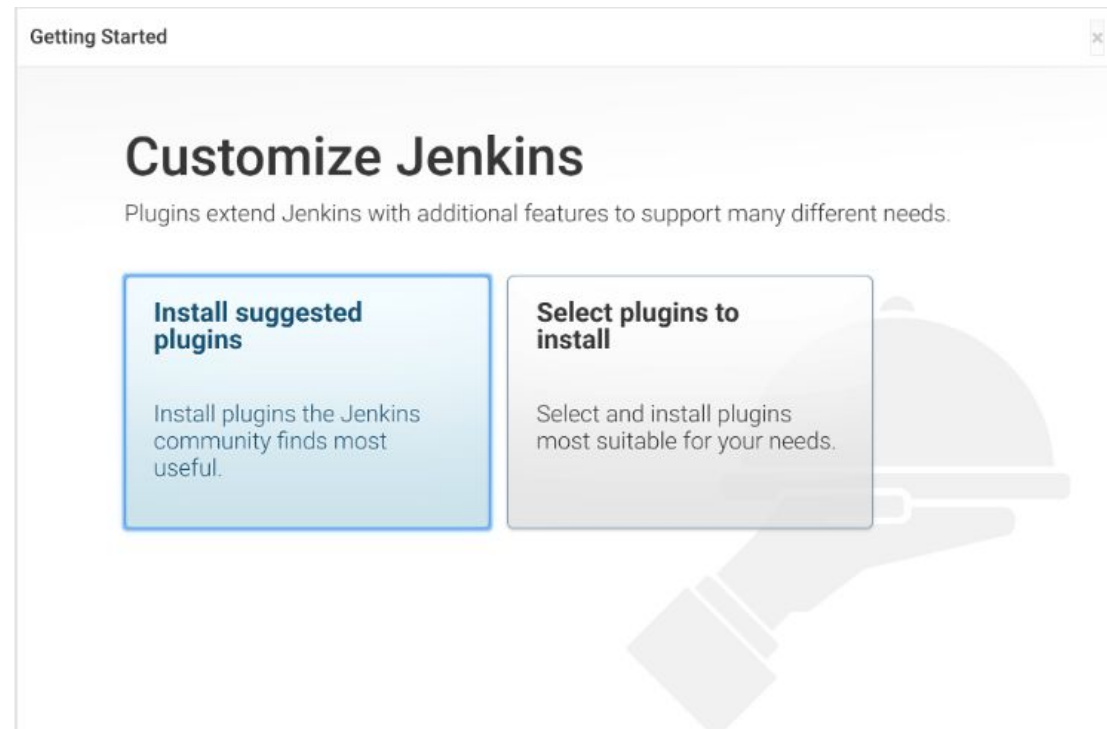
Administrator password

Continue

Colocar la clase de la siguiente ruta.

```
# sudo cat /var/lib/jenkins/secrets/initialAdminPassword
```

Crear un usuario y contraseña.



Instalar y configurar MAVEN.

```
# echo "export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64/jre" >> ~/.bash_profile && source ~/.bash_profile
# wget https://www-eu.apache.org/dist/maven/maven-3/3.6.1/binaries/apache-maven-3.6.1-bin.tar.gz
# tar xvf apache-maven-3.6.1-bin.tar.gz
# sudo mv apache-maven-3.6.1 /usr/local/apache-maven
# echo "export M2_HOME=/usr/local/apache-maven" >> ~/.bash_profile && source ~/.bash_profile
# echo "export M2=$M2_HOME/bin" >> ~/.bash_profile && source ~/.bash_profile
# echo "export PATH=$M2:$PATH" >> ~/.bash_profile && source ~/.bash_profile
```

Asignar permisos a jenkins en docker.

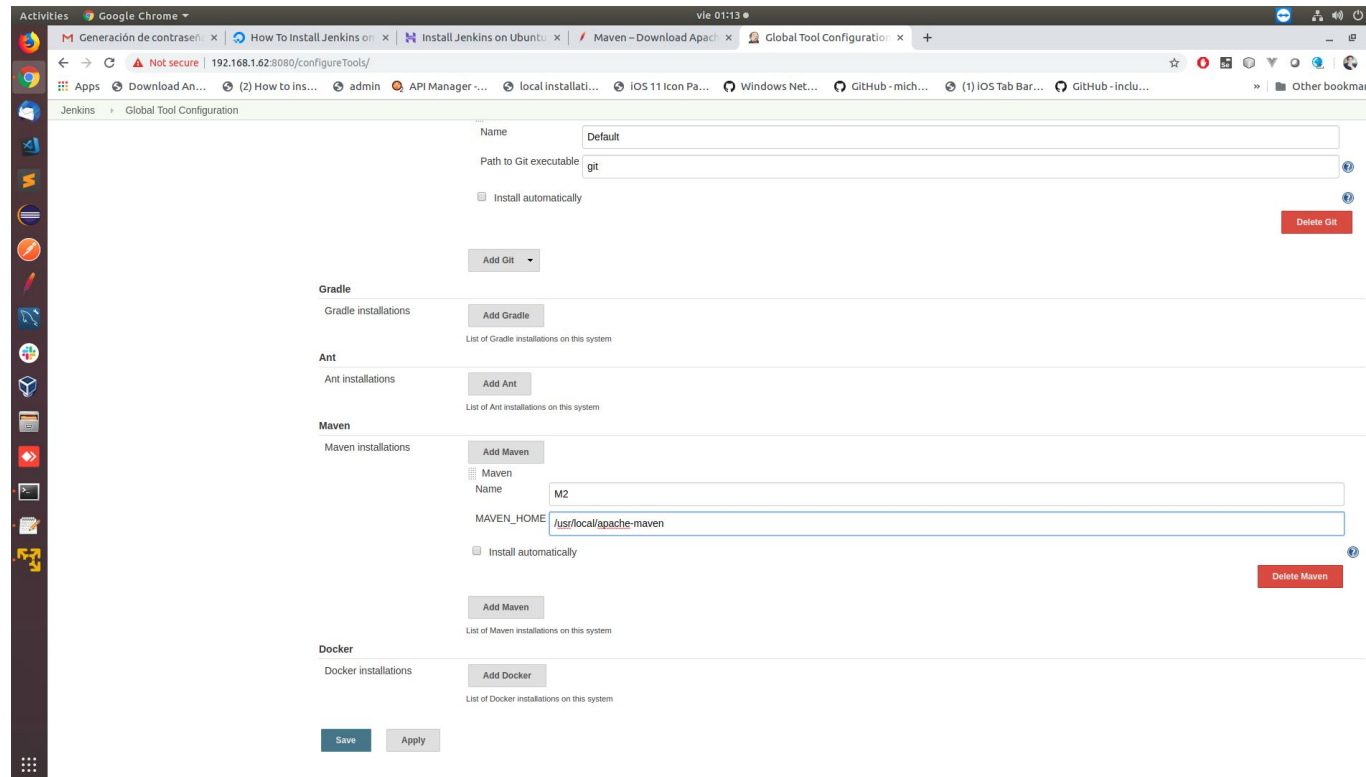
```
# sudo usermod -a -G docker jenkins
```

Instalar plugin de GitLab

Ir a "<http://localhost:8080/pluginManager/>", e instalar el plugin de GitLab.

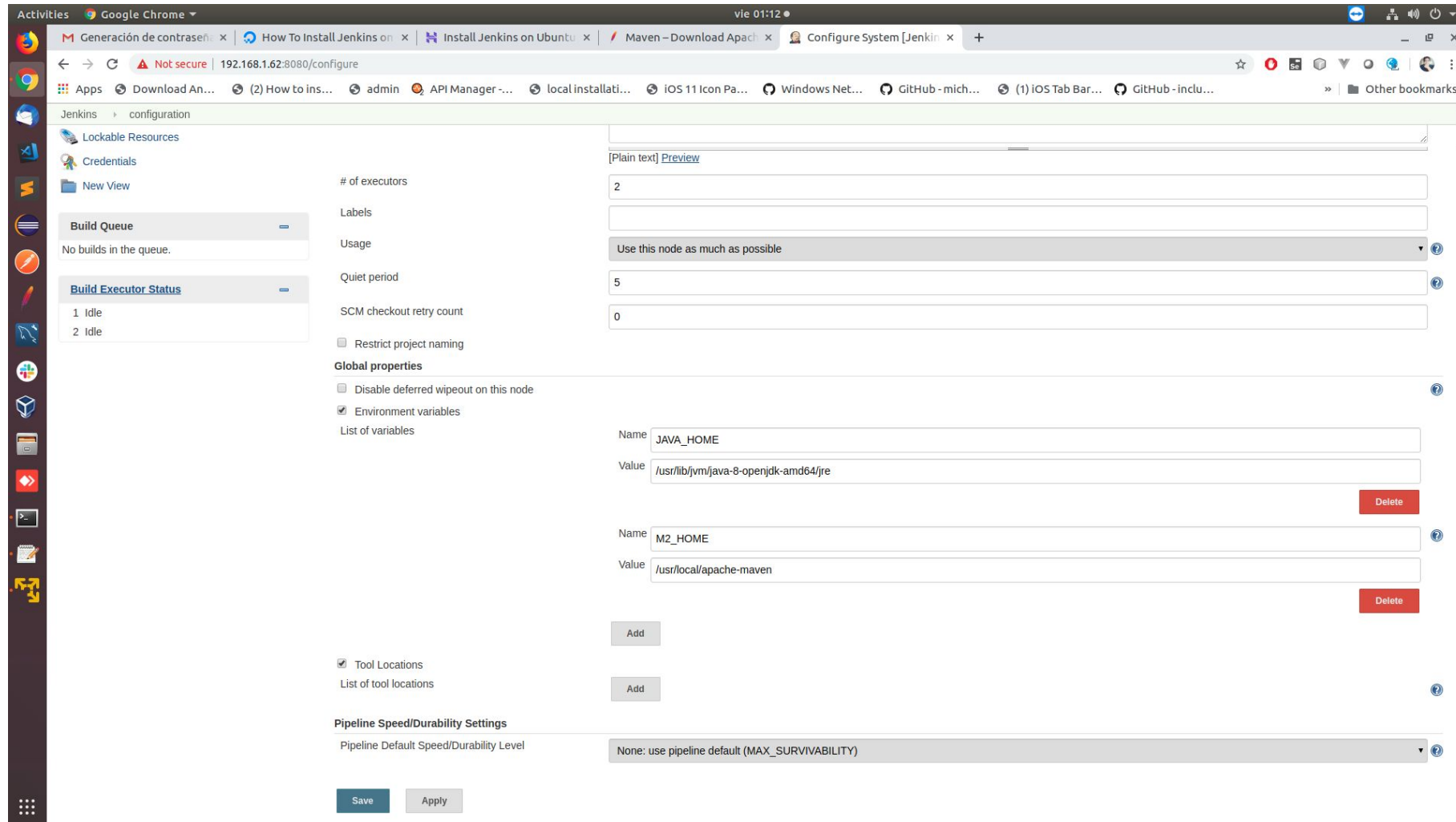
Configurar herramientas

.Ir a "<http://127.0.0.1:8080/configureTools>"



Configurar variables de entorno

Ir a "http://127.0.0.1:8080/configure"



The screenshot shows the Jenkins configuration interface in a Google Chrome browser. The address bar displays "192.168.1.62:8080/configure". The left sidebar contains navigation links: "Jenkins", "configuration", "Lockable Resources", "Credentials", "New View", "Build Queue", and "Build Executor Status". The "Build Queue" section shows "No builds in the queue." and the "Build Executor Status" section shows two idle executors. The main configuration area is titled "Global properties" and includes several sections: "Global properties" with checkboxes for "Restrict project naming", "Disable deferred wipeout on this node", and "Environment variables" (checked); "List of variables" with two entries: "JAVA_HOME" with value "/usr/lib/jvm/java-8-openjdk-amd64/jre" and "M2_HOME" with value "/usr/local/apache-maven", each with a "Delete" button; "Tool Locations" with a checked checkbox and a "List of tool locations" section with an "Add" button; and "Pipeline Speed/Durability Settings" with a dropdown menu set to "None: use pipeline default (MAX_SURVIVABILITY)". At the bottom, there are "Save" and "Apply" buttons.

Activities Google Chrome vie 01:12

Generación de contraseñas x How To Install Jenkins on x Install Jenkins on Ubuntu x Maven - Download Apache x Configure System [Jenkin x +

Not secure | 192.168.1.62:8080/configure

Apps Download An... (2) How to Ins... admin API Manager -... local installati... IOS 11 Icon Pa... Windows Net... GitHub - mich... (1) IOS Tab Bar... GitHub - Inclu... Other bookmarks

Jenkins configuration

Lockable Resources

Credentials

New View

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

of executors

Labels

Usage

Use this node as much as possible

Quiet period

5

SCM checkout retry count

0

Restrict project naming

Global properties

Disable deferred wipeout on this node

Environment variables

List of variables

Name JAVA_HOME

Value /usr/lib/jvm/java-8-openjdk-amd64/jre

Delete

Name M2_HOME

Value /usr/local/apache-maven

Delete

Add

Tool Locations

List of tool locations

Add

Pipeline Speed/Durability Settings

Pipeline Default Speed/Durability Level

None: use pipeline default (MAX_SURVIVABILITY)

Save Apply

Configurar variables de entorno

Activities Google Chrome vie 01:14

Generación de contraseñas x How To Install Jenkins on Ubuntu x Install Jenkins on Ubuntu x Maven - Download Apache x Configure System [Jenkins x +

Not secure | 192.168.1.62:8080/configure

Apps Download An... (2) How to ins... admin API Manager -... local installati... iOS 11 Icon Pa... Windows Net... GitHub - mich... (1) iOS Tab Bar... GitHub - inclu... Other bookmarks

Jenkins > configuration

Global properties

☐ Disable deferred wipeout on this node

☒ Environment variables

List of variables

Name JAVA_HOME

Value /usr/lib/jvm/java-8-openjdk-amd64/jre

Delete

Name M2_HOME

Value /usr/local/apache-maven

Delete

Add

☒ Tool Locations

List of tool locations

Name (Maven) M2

Home /usr/local/apache-maven

Delete

Add

Pipeline Speed/Durability Settings

Pipeline Default Speed/Durability Level None: use pipeline default (MAX_SURVIVABILITY)

Usage Statistics

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

Gitlab

Enable authentication for '/project' end-point ☒

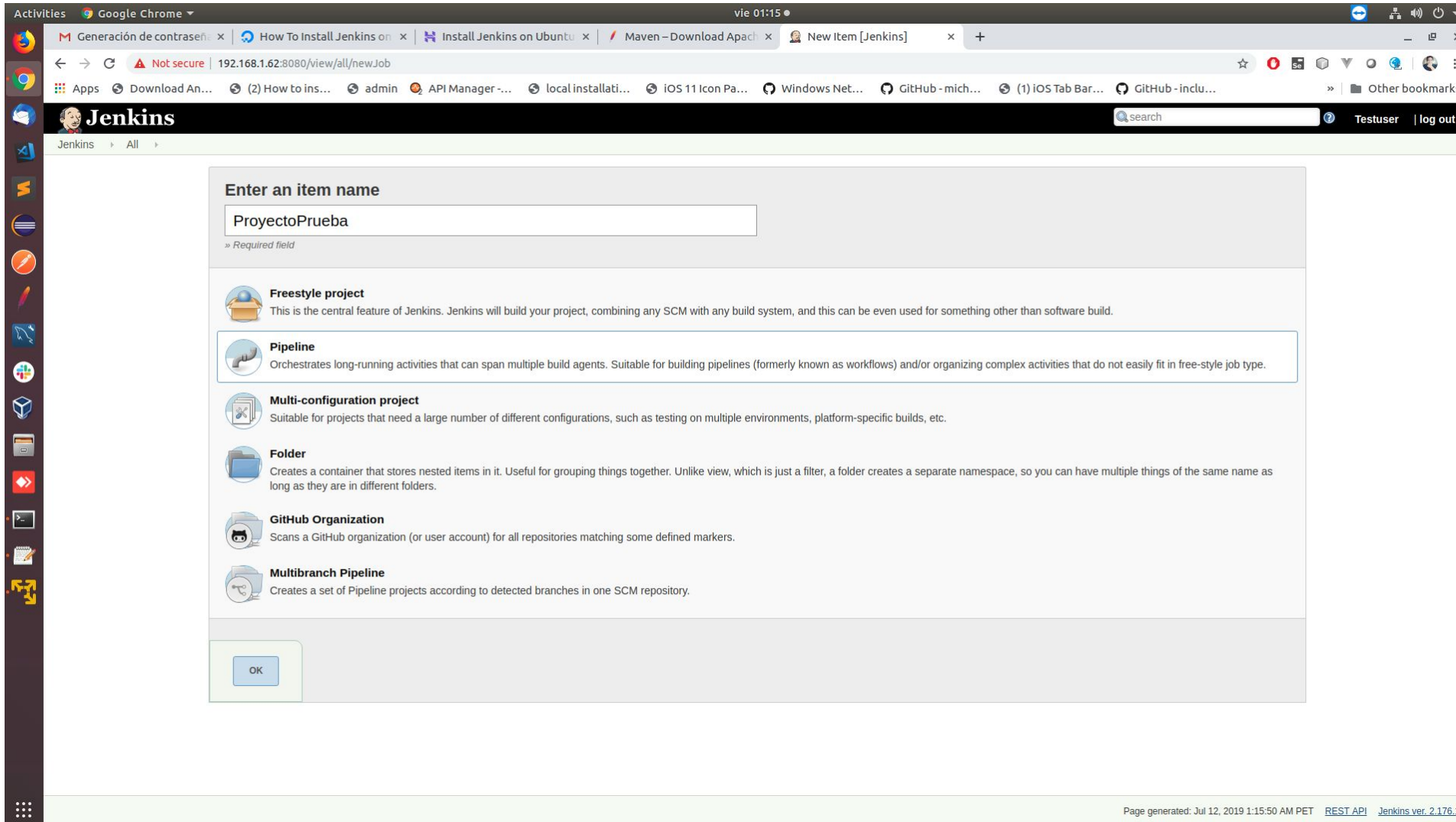
GitLab connections

Connection name

Gitlab connection name required.

Save Apply

Crear un Pipeline



Activities Google Chrome vie 01:15

Generación de contraseñas x How To Install Jenkins on x Install Jenkins on Ubuntu x Maven - Download Apache x New Item [Jenkins] x +

Not secure 192.168.1.62:8080/view/all/newJob

Apps Download An... (2) How to ins... admin API Manager ... local installati... iOS 11 Icon Pa... Windows Net... GitHub - mich... (1) iOS Tab Bar... GitHub - inclu... Other bookmarks

Jenkins search Testuser log out

Jenkins > All >

Enter an item name

ProyectoPrueba

» 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.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

GitHub Organization
Scans a GitHub organization (or user account) for all repositories matching some defined markers.

Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.

OK

Page generated: Jul 12, 2019 1:15:50 AM PET [REST API](#) [Jenkins ver. 2.176.1](#)

Crear un Pipeline

The screenshot shows the Jenkins web interface in a Google Chrome browser. The address bar indicates the URL is `192.168.1.62:8080/job/ProyectoPrueba/configure`. The interface is divided into three main sections: **Build Triggers**, **Advanced Project Options**, and **Pipeline**.

Build Triggers:

- ☐ Build after other projects are built
- ☐ Build periodically
- ☒ Build when a change is pushed to GitLab. GitLab webhook URL: `http://192.168.1.62:8080/project/ProyectoPrueba`

Enabled GitLab triggers:

Trigger	Enabled
Push Events	<input checked="" type="checkbox"/>
Opened Merge Request Events	<input checked="" type="checkbox"/>
Accepted Merge Request Events	<input type="checkbox"/>
Closed Merge Request Events	<input type="checkbox"/>
Rebuild open Merge Requests	Never
Approved Merge Requests (EE-only)	<input checked="" type="checkbox"/>
Comments	<input checked="" type="checkbox"/>
Comment (regex) for triggering a build	Jenkins please retry a build

Advanced Project Options:

- ☐ GitHub hook trigger for GITScm polling
- ☐ Poll SCM
- ☐ Disable this project
- ☐ Quiet period
- ☐ Trigger builds remotely (e.g., from scripts)

Pipeline:

Definition: Pipeline script

Script: 1

Buttons: Save, Apply, try sample Pipeline...

Crear un Pipeline

Activities Google Chrome vie 01:22

Generación de contraseñas x How To Install Jenkins on Ubuntu x Install Jenkins on Ubuntu x Maven - Download Apache x Dashboard [Jenkins] x WhatsApp x

Not secure 192.168.1.62:8080

Apps Download An... (2) How to ins... admin API Manager -... local installati... iOS 11 Icon Pa... Windows Net... GitHub - mich... (1) iOS Tab Bar... GitHub - inclu... Other bookmarks

Jenkins search Testuser | log out

DISABLE AUTO REFRESH

add description

All +

S	W	Name	Last Success	Last Failure	Last Duration
		ProyectoPrueba	N/A	N/A	N/A

Icon: [S](#) [M](#) [L](#)

Legend RSS for all RSS for failures RSS for just latest builds

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

Page generated: Jul 12, 2019 1:22:17 AM PET [REST API](#) [Jenkins ver. 2.176.1](#)

Script del Pipeline (carpeta Recursos)

Correr el flujo una vez para crear la carpeta workspace.

[\[icon\] añadir descripción](#)

S	W	Nombre ↓	Último Éxito	Último Fallo	Última Duración
		IntegracionContinua	2 Hor 26 Min - #14	3 Hor 2 Min - #13	23 Min 

Icono: [S](#) [M](#) [L](#)

[Guía de iconos](#)  [RSS para todos](#)  [RSS para fallas](#)  [RSS para los más recientes](#)

Crear el scripts de despliegue

```
# cd /var/lib/jenkins/workspace/"Nombre_pipeline"  
# sudo mkdir deployment  
# sudo vi deployment/Dockerfile
```

```
FROM openjdk:8-jdk-alpine  
EXPOSE 8090  
ADD app.jar testapp.jar  
ENTRYPOINT ["java","-jar","testapp.jar"]
```

Crear el scripts de despliegue

```
# sudo vi runDeployment.sh
```

```
#!/bin/bash -ex
echo "Deploying app.jar to docker folder"
packageName=`ls target/continuousintegrationandcontinuousdeliveryapp*.jar`
versionid=`echo $packageName | awk -F "-" '{ print $2 }`
versionname=`echo $packageName | awk -F "-" '{ print $3 }' | awk -F "." '{ print $1 }`
version=`echo $versionid-$versionname`
echo "version: $version"
cp -r $packageName deployment/app.jar
dockerImageName=app
dockerpid=`docker ps -a | grep $dockerImageName | grep "Up" | awk -F " " '{ print $1 }`
if [[ $dockerpid != "" ]]; then
    docker kill $dockerpid
    docker rm $dockerpid
fi
docker build -t $dockerImageName deployment/.
docker run -d -p 8090:8090 $dockerImageName
```

Asignar permisos de ejecución a los archivos

```
# sudo chown jenkins:jenkins runDeployment.sh  
# sudo chmod 775 runDeployment.sh  
# sudo chown jenkins:jenkins -R deployment
```

Ejecutar la Integración y verificar los pasos

[añadir descripción](#)

Todo +					
S	W	Nombre ↓	Último Éxito	Último Fallo	Última Duración
		IntegracionContinua	2 Hor 35 Min - #14	3 Hor 10 Min - #13	23 Min 

Stage View

					Preparation	Test	Build	Results	Deployment
Average stage times: (Average <u>full</u> run time: ~23min 51s)					2s	34s	12s	881ms	2min 57s
<div>#14</div> <div>Jul 12 13:03</div> <div>No Changes</div> <div></div>					1s	9s	4s	308ms	23min 34s
<div>#13</div> <div>Jul 12 12:27</div> <div>No Changes</div> <div></div>					1s	10s	3s	300ms	633ms failed

Gracias

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