

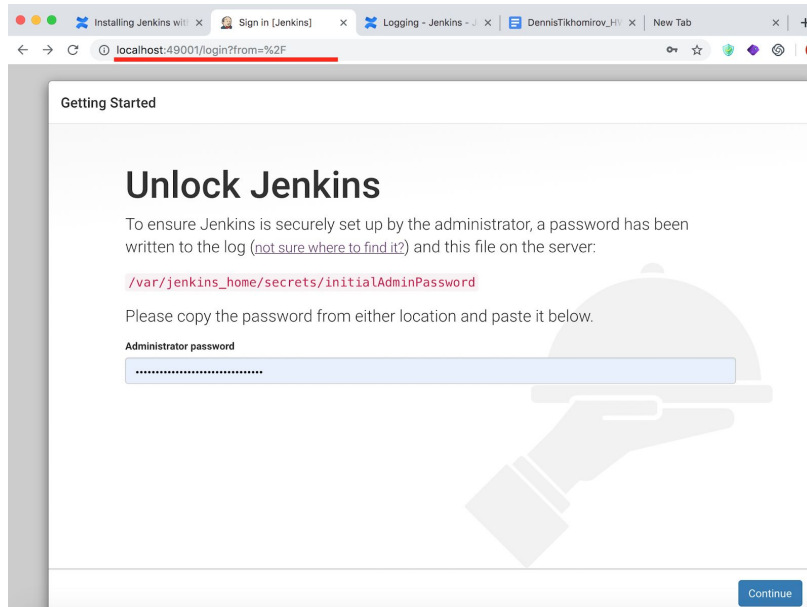
## Task 10. Jenkins+Pipeline

### 1. Install and start Jenkins.

#### 1.1 I used Docker installation:

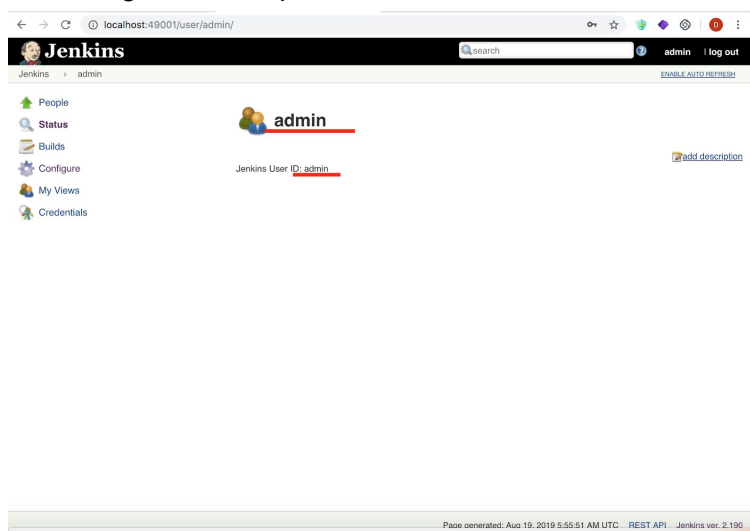
```
docker pull jenkins
docker run -d -p 49001:8080 -v $PWD/jenkins:/var/jenkins_home:z -t
jenkins/jenkins
```

#### 1.2 Jenkins is available on port 49001 (port 8080 is occupied by Tomcat on my PC).



#### 1.3 Admin password in `~JENKINS_HOME/jenkins/secrets/initialAdminPassword`

#### 1.4 Configure Admin profile

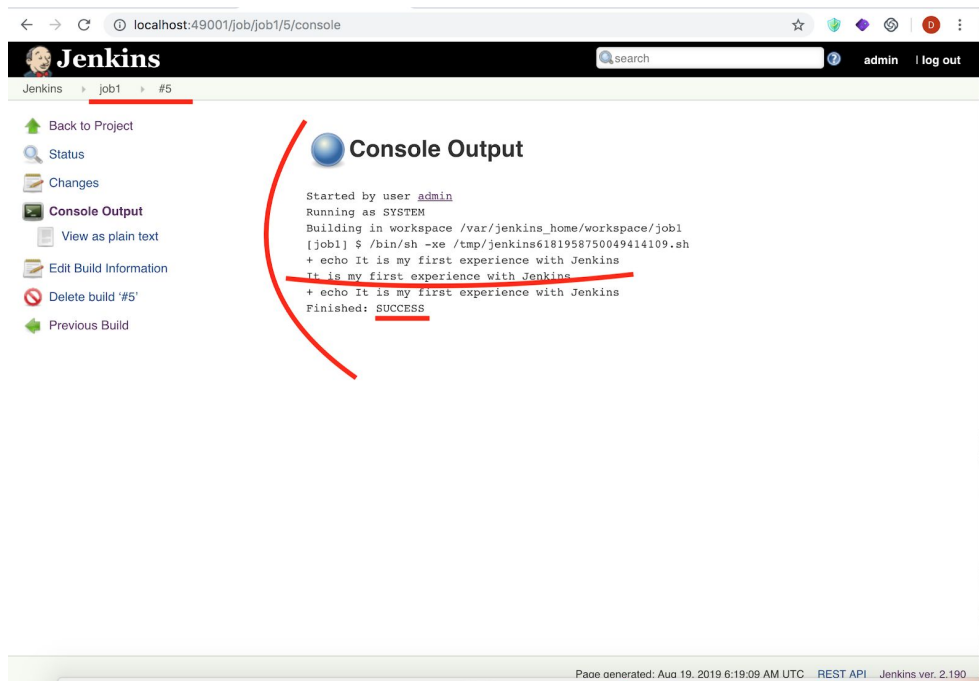


## 2. Create job in Jenkins

### 2.1 Build >> Execute shell:

```
echo "It is my first experience with Jenkins"  
echo "It is my first experience with Jenkins" >> ./result.log
```

Result.log file is placed to `~JENKINS_HOME/jenkins/workspace/job1`



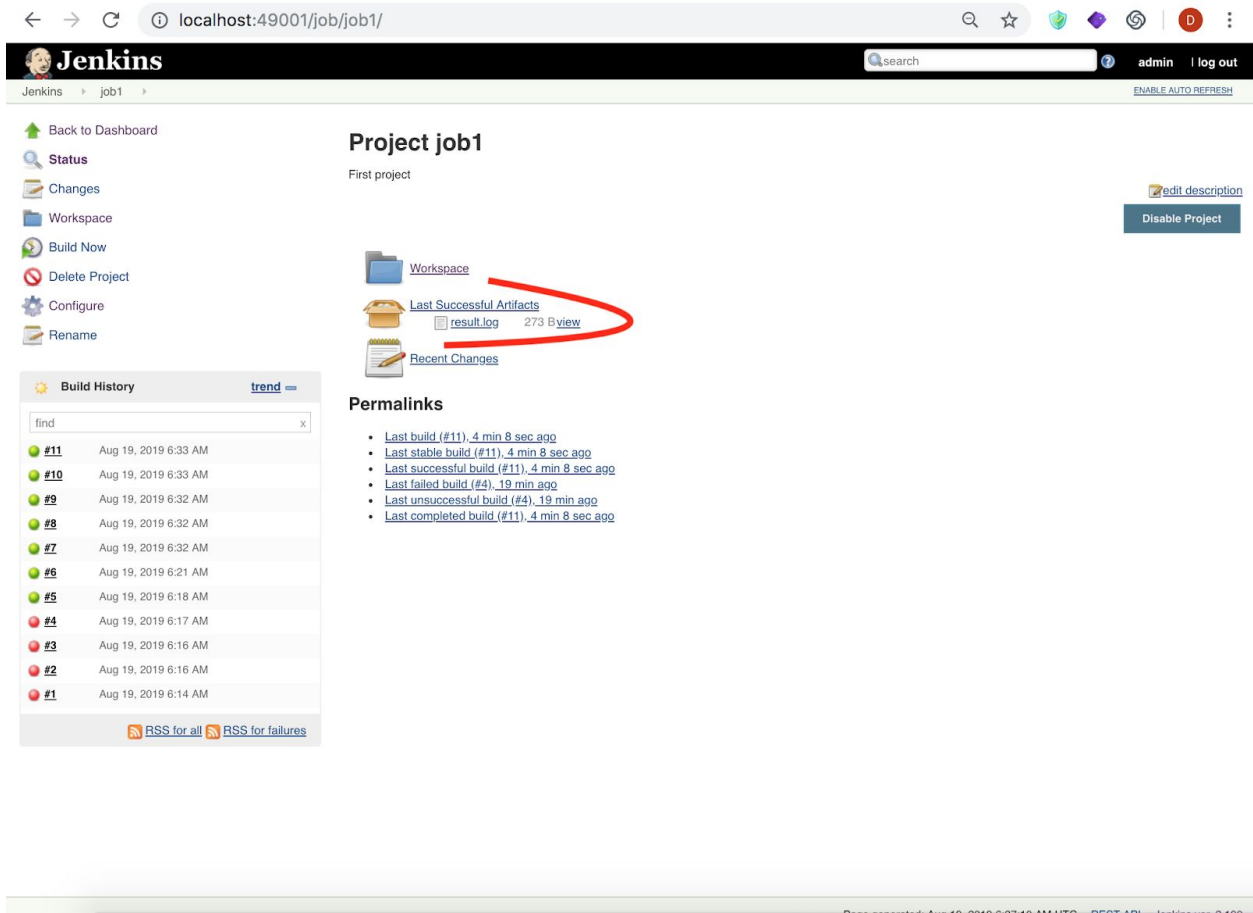
### 2.4 Add one more step to build section:

```
echo "Build step#2"  
cp ./result.log ../../result.log
```

Add post-build action

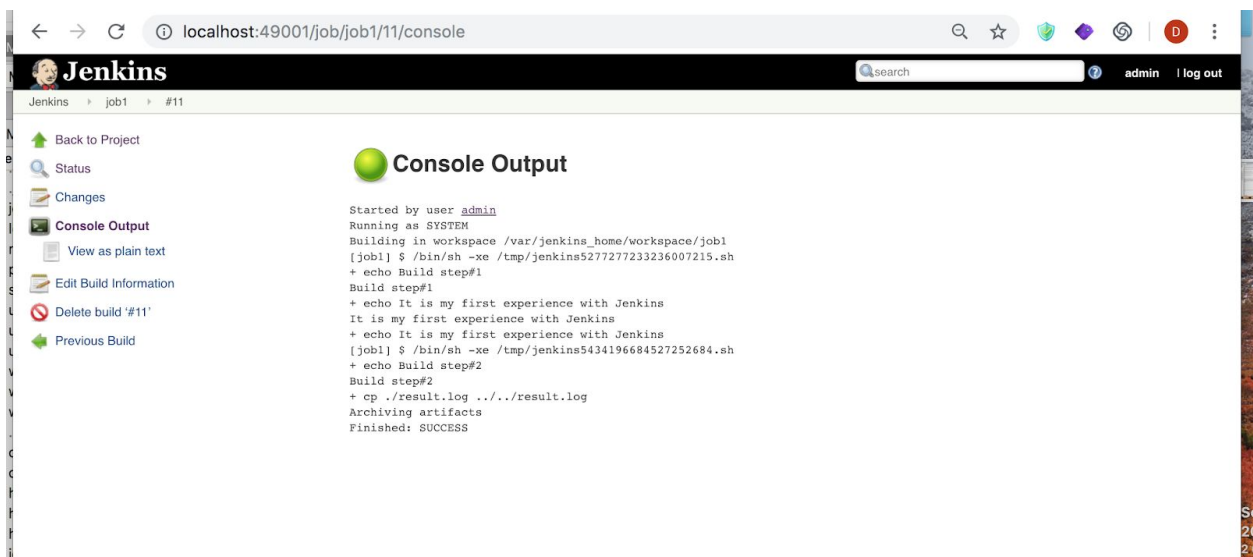


## Results in screenshots



The screenshot shows the Jenkins web interface for a project named 'job1'. The browser address bar displays 'localhost:49001/job/job1/'. The Jenkins header includes a search bar, 'admin' link, and 'log out' button. The left sidebar contains navigation links: 'Back to Dashboard', 'Status', 'Changes', 'Workspace', 'Build Now', 'Delete Project', 'Configure', and 'Rename'. The main content area is titled 'Project job1' and shows 'First project'. It includes links for 'Workspace', 'Last Successful Artifacts' (with a red circle highlighting 'result.log' and '273 B view'), and 'Recent Changes'. A 'Disable Project' button is visible. Below the main content is a 'Build History' table with columns for build number, status, and time. The table lists builds #1 through #11, with #11 being the most recent and successful. At the bottom, there are links for 'RSS for all' and 'RSS for failures'.

Build Number	Status	Time
#11	Success	Aug 19, 2019 6:33 AM
#10	Success	Aug 19, 2019 6:33 AM
#9	Success	Aug 19, 2019 6:32 AM
#8	Success	Aug 19, 2019 6:32 AM
#7	Success	Aug 19, 2019 6:32 AM
#6	Success	Aug 19, 2019 6:21 AM
#5	Success	Aug 19, 2019 6:18 AM
#4	Failure	Aug 19, 2019 6:17 AM
#3	Failure	Aug 19, 2019 6:16 AM
#2	Failure	Aug 19, 2019 6:16 AM
#1	Failure	Aug 19, 2019 6:14 AM














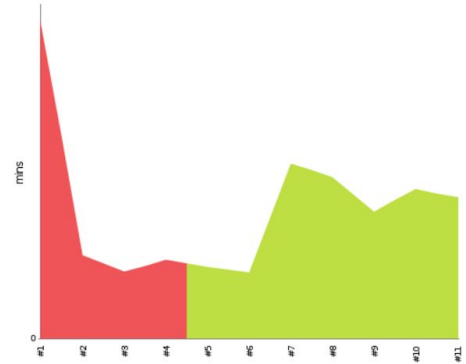
The screenshot shows the Jenkins web interface for the console output of build #11. The browser address bar displays 'localhost:49001/job/job1/11/console'. The Jenkins header is the same as the previous screenshot. The left sidebar contains navigation links: 'Back to Project', 'Status', 'Changes', 'Console Output', 'View as plain text', 'Edit Build Information', 'Delete build '#11'', and 'Previous Build'. The main content area is titled 'Console Output' and shows the build log. The log starts with 'Started by user admin' and 'Running as SYSTEM'. It then shows the build steps: 'Building in workspace /var/jenkins\_home/workspace/job1', 'Build step#1', and 'Build step#2'. The output of these steps is displayed, including 'echo It is my first experience with Jenkins' and 'cp ./result.log ../../result.log'. The log ends with 'Archiving artifacts' and 'Finished: SUCCESS'.

```
Started by user admin
Running as SYSTEM
Building in workspace /var/jenkins_home/workspace/job1
[job1] $ /bin/sh -xe /tmp/jenkins527727233236007215.sh
+ echo Build step#1
Build step#1
+ echo It is my first experience with Jenkins
It is my first experience with Jenkins
+ echo It is my first experience with Jenkins
[job1] $ /bin/sh -xe /tmp/jenkins5434196684527252684.sh
+ echo Build step#2
Build step#2
+ cp ./result.log ../../result.log
Archiving artifacts
Finished: SUCCESS
```

- ## Timeline

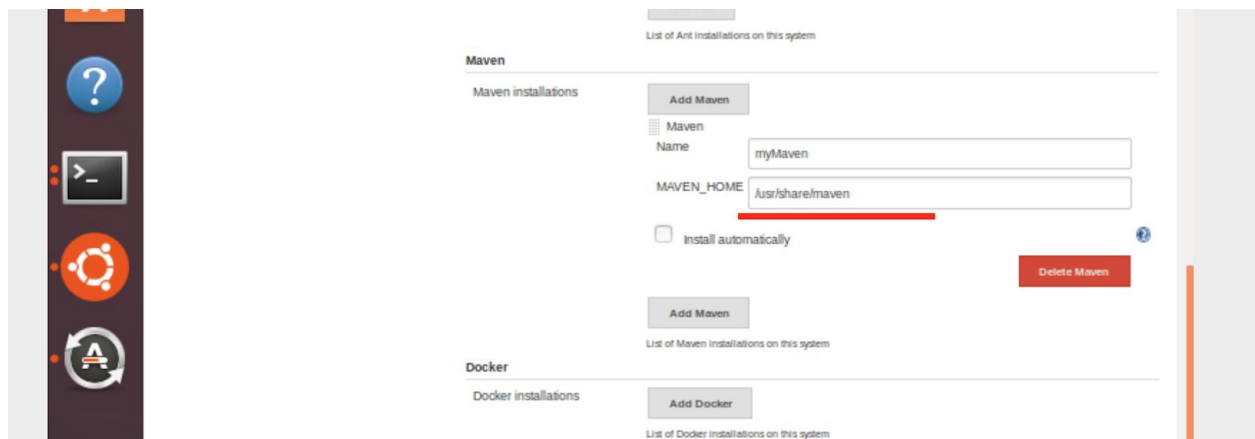


Build	↑	Duration
 #11		0.21 sec
 #10		0.22 sec
 #9		0.19 sec
 #8		0.24 sec
 #7		0.26 sec
 #6		99 ms
 #5		0.1 sec
 #4		0.11 sec
 #3		0.1 sec
 #2		0.12 sec
 #1		0.48 sec



### 3. Maven

#### 3.1. Configure Maven in Jenkins

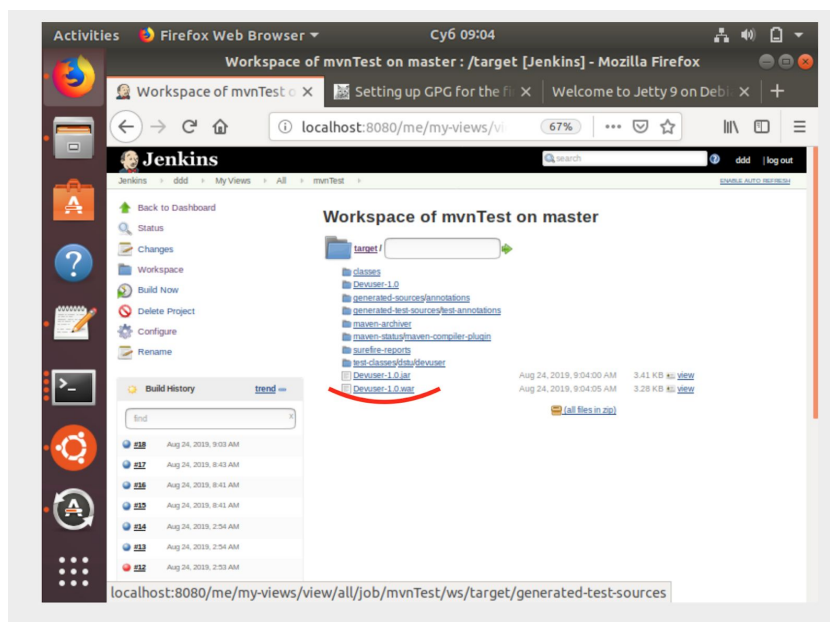


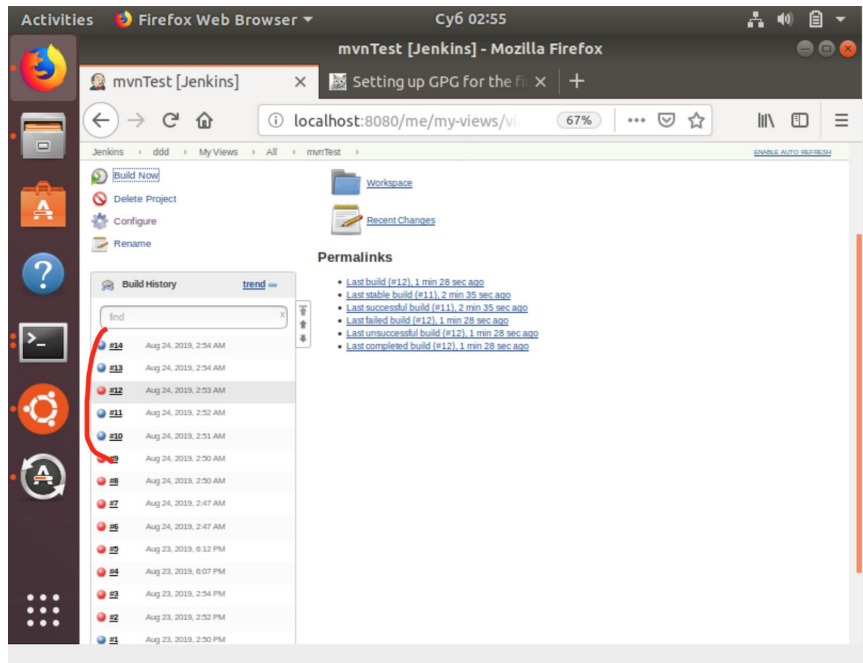
#### 3.2 Create build

I used Maven project

<https://github.com/dennis00010011b/simpleweb>

I used target `clean install compile war:war`

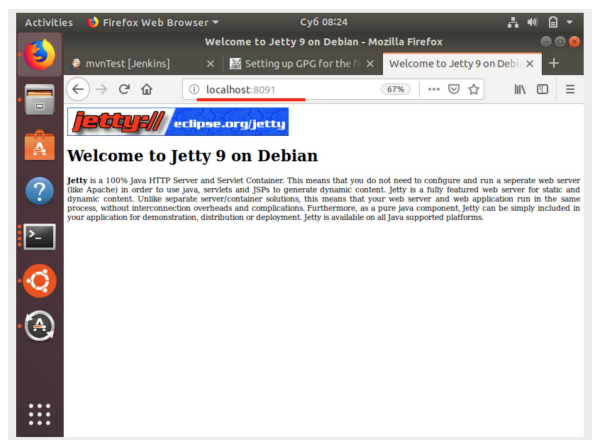
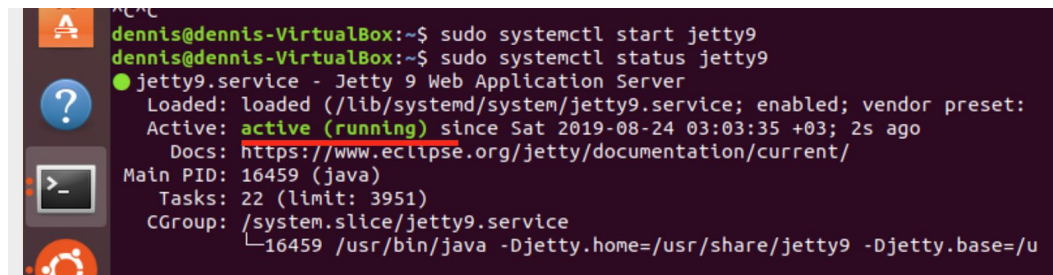




### 3.3 Deploy project with Jetty

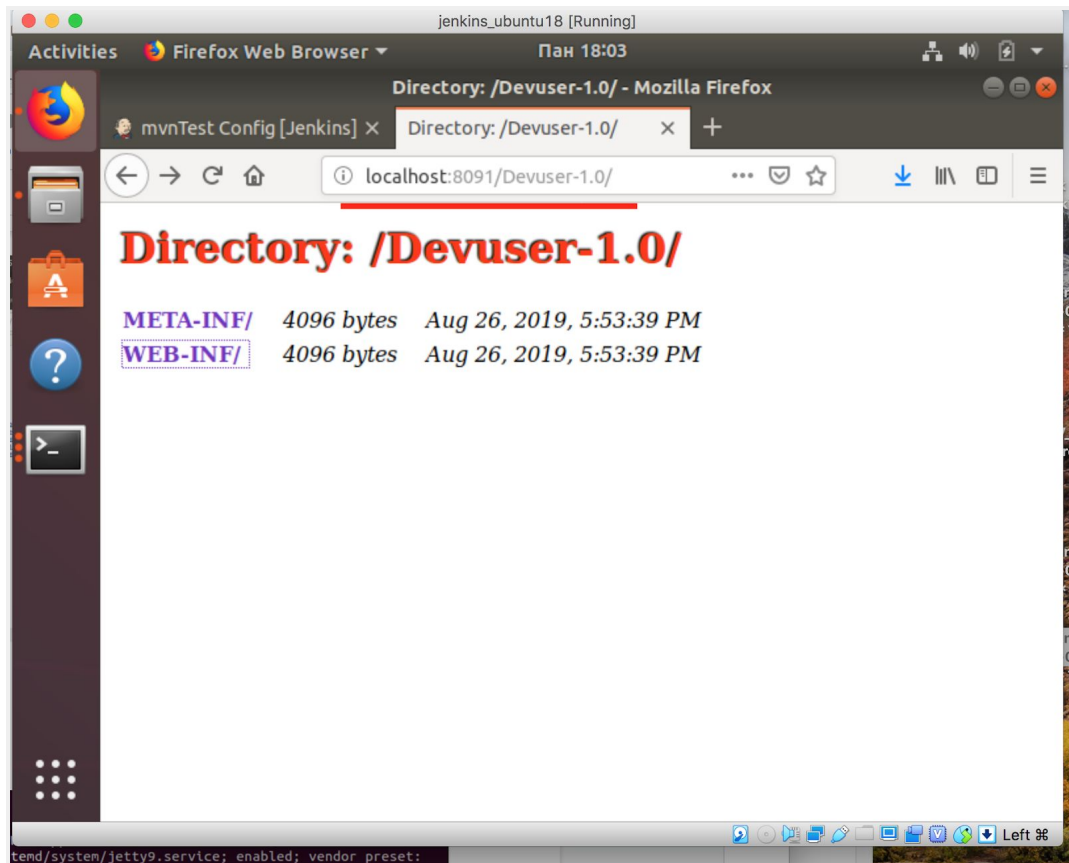
#### 3.3.1 Install Jetty

```
sudo apt install jetty9
```



### 3.3.2 Add build-action Shell to Jenkins job:

```
sudo cp -rf home/dennis/.jenkins/workspace/mvnTest/target/Devuser-1.0.war  
/usr/share/jetty9/webapps  
java -jar /usr/share/jetty9/start.jar  
sudo systemctl restart jetty9
```



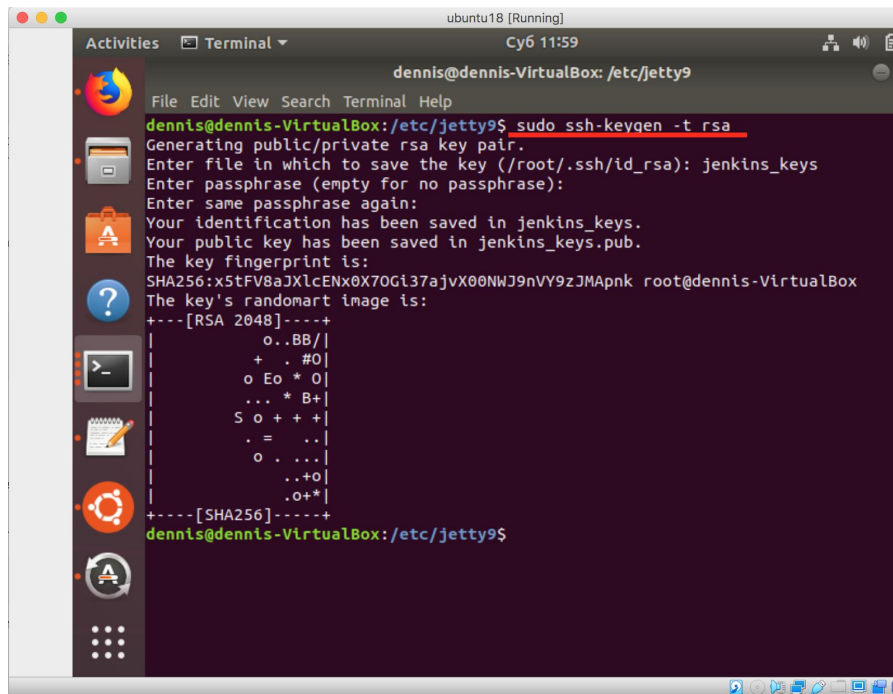
## 4. Master and slave nodes in Jenkins

### 4.1 Install SSH plugin

### 4.2 Generate SSH keys , file name j2

<https://www.hostinger.com/tutorials/ssh/how-to-set-up-ssh-keys>

```
ssh-keygen -t rsa
```



Copy ssh public keys to each slave node with command:

```
ssh-copy-id -f -i j2.pub root@192.168.100.22
```

```
ssh-copy-id -f -i j2.pub root@192.168.100.23
```

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	<a href="#">master</a>	Linux (amd64)	In sync	6.10 GB	0 B	6.10 GB	0ms
	<a href="#">Slave Node 1</a>	Linux (amd64)	In sync	6.08 GB	0 B	6.08 GB	26ms
	<a href="#">Slave Node 2</a>	Linux (amd64)	In sync	6.08 GB	0 B	6.08 GB	25ms
	Data obtained	0.2 sec	0.2 sec	0.2 sec	0.19 sec	0.19 sec	0.19 sec

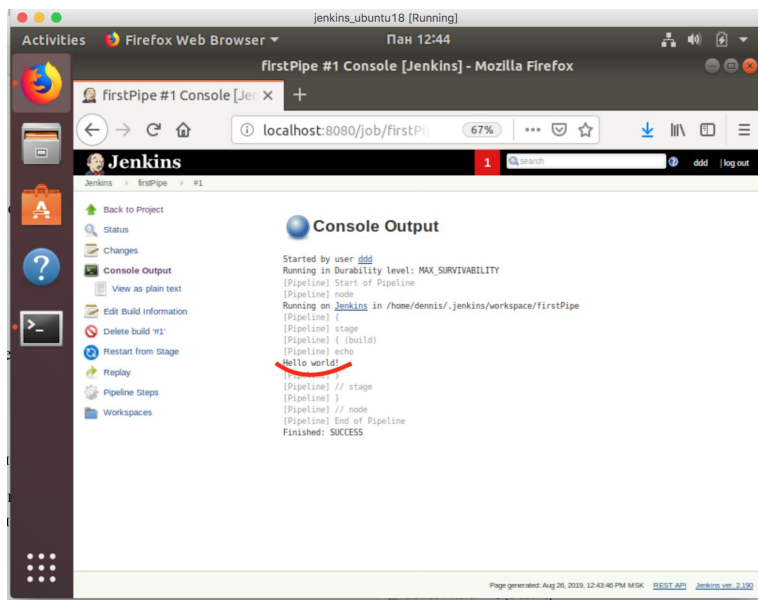
Refresh status



## 5 Jenkins+pipeline

### 5.1 Simple pipeline

```
pipeline {  
  agent { label 'master' }  
  stages {  
    stage('build') {  
      steps { echo "Hello World!" }  
    }  
  }  
}
```



### 5.2 Add one more stage

```
pipeline {  
  agent { label 'master' }  
  stages {  
    stage('build') {  
      steps { echo "Hello World!" }  
    }  
    stage('deploy') {  
      steps { echo "Hello World2!" }  
    }  
  }  
}
```

jenkins\_ubuntu18 [Running]

Activities Firefox Web Browser План 12:51

firstPipe [Jenkins] - Mozilla Firefox

firstPipe [Jenkins] x +

localhost:8080/job/firstPi/ 67%

Jenkins firstPipe

Back to Dashboard Status Changes Build Now Delete Pipeline Configure Full Stage View Rename Pipeline Syntax

Build History trend

find

Aug 26, 2019, 12:51 PM Aug 26, 2019, 12:49 PM Aug 26, 2019, 12:49 PM Aug 26, 2019, 12:42 PM

RSS for all RSS for failures

Stage Logs (deploy)

Print Message - Hello world!2 (self time 18ms)

Hello world!2

Recent Changes

Stage View

Average stage times:  
(Average full run time: ~4s)

	build	deploy
Aug 26 12:51	120ms	113ms
Aug 26 12:49	293ms	
Aug 26 12:49	196ms	
Aug 26	274ms	

ddd | log out

add description

Disable Project

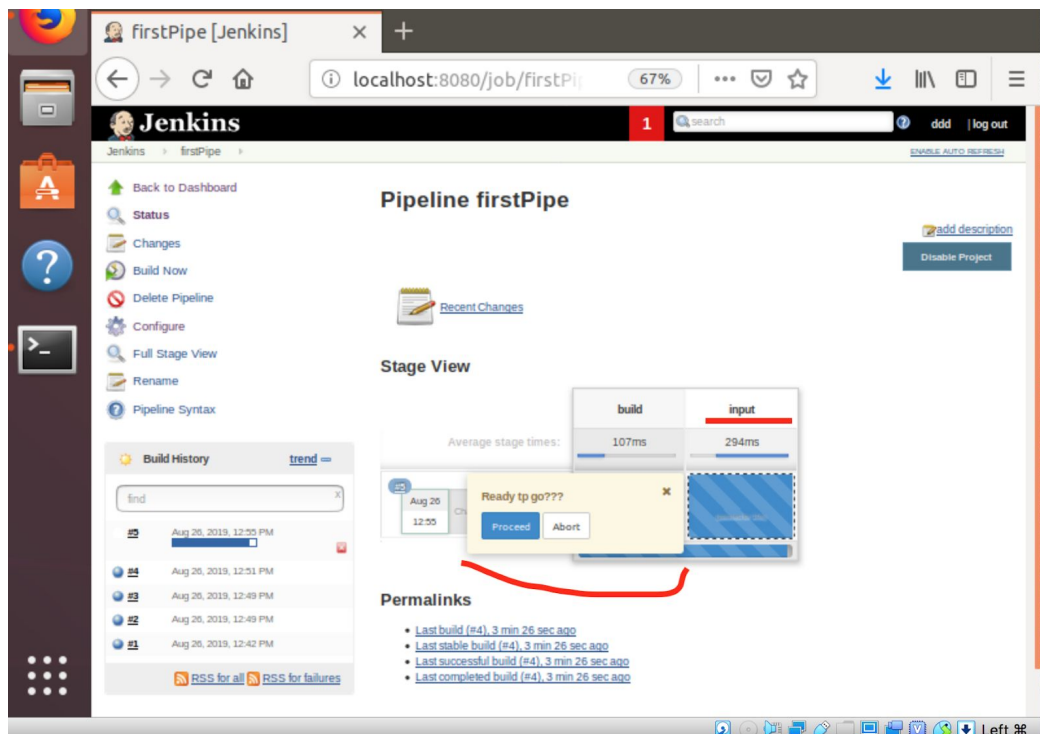
Left

### 5.3 Add one more stage

```
pipeline {
  agent { label 'master' }
  stages {
    stage('build') {
      steps { echo "Hello World!" }
    }

    stage('input') {
      steps { input "Ready to go??" }
    }

    stage('deploy') {
      steps { echo "Hello World2!" }
    }
  }
}
```



Blueocean has failed to start !