Deployment #3

Welcome to Deployment 3!! Time to deploy to your customized VPC. You will need to follow the steps below and then add to the pipeline.

- **First I installed Jenkins on an EC2**

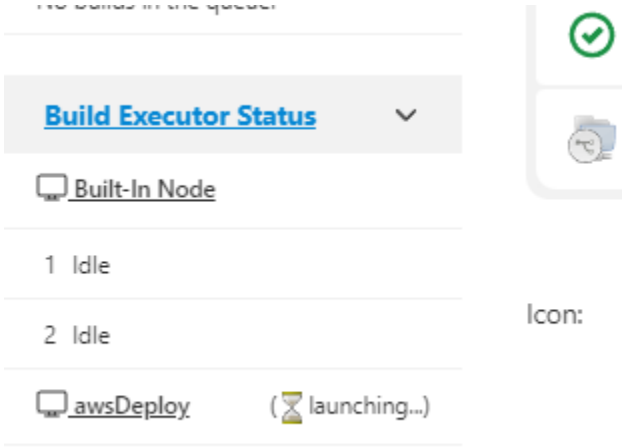
- **Next, I created an EC2 in my Public Subnet of the Kura VPC that we created in class last week**

- In the security groups for the Ubuntu EC2, I added ports number: 22 and 5000 .
- I attempted to use the command sudo apt install to install the following packages: **default-jre, python3-pip, python3.10-venv and nginx.**
- **I could not install python3-pip at first and I received the error " Package 'python3-pip' has no installation candidate". To fix this error I ran sudo apt update. Then, I was able to run sudo apt install python3-pip.**

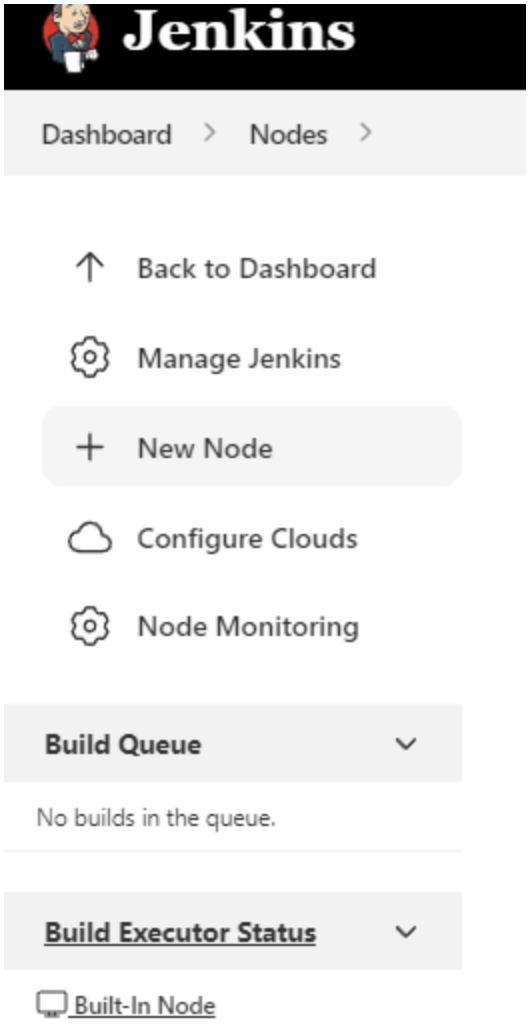
- **I had to use sudo apt-get install -y python3-venv because sudo apt installdid not work.**
- **I also was then able to install nginx.**

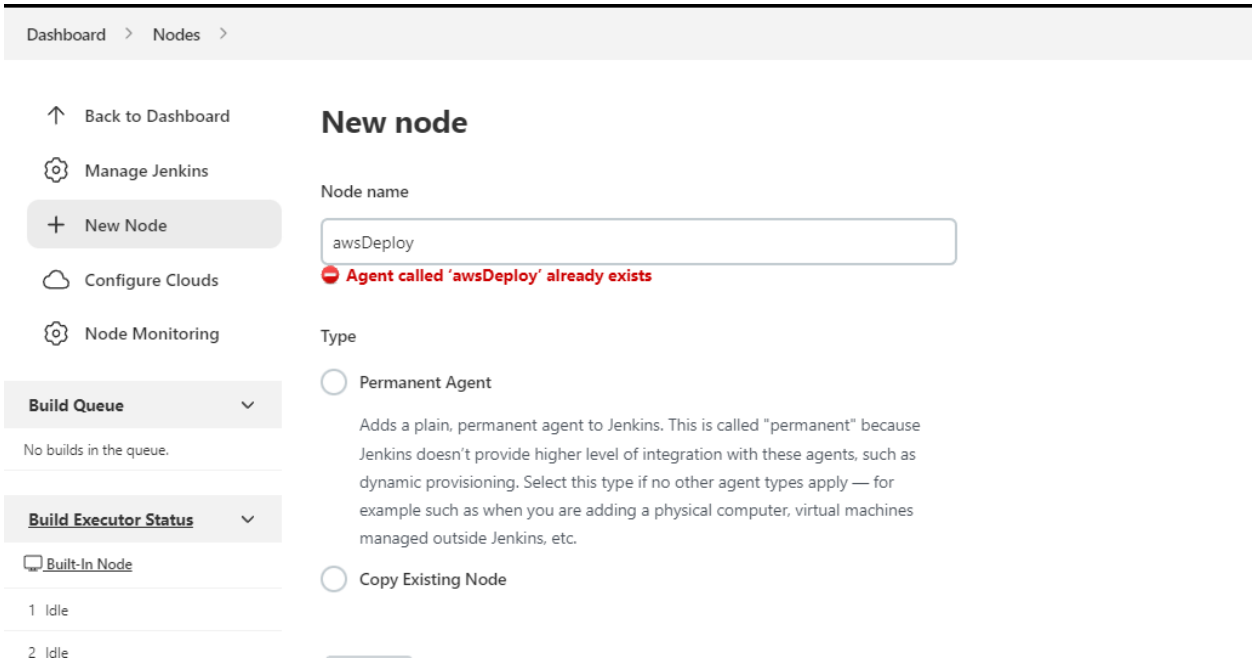
3. In order to configure and connect the Jenkins agents

- I entered my Jenkins server and selected the Build Executor status:



- Next, I selected “+ New Node” to configure and add the agent. I entered the node name “awsDeploy”, then selected “Permanent Agent”, and then I created the Node.


Jenkins
Dashboard
Nodes
Back to Dashboard
Manage Jenkins
New Node
Configure Clouds
Node Monitoring
Build Queue
No builds in the queue.
Build Executor Status
Built-In Node



- Next I entered the configurations below:
  - Name: **awsDeploy**
  - Description: **Deployment server**
  - Number of executors: **1**
  - Remote root directory: **/home/ubuntu/agent**
  - Labels: **awsDeploy**
  - Usage: **only build jobs with label expessions matching this node**
  - Launch method: **launch agents via ssh**
  - I added the IP of my Public EC2 to the Host: 34.231.169.48
  - **These were the steps that I took to add the credentials.**
    - **Select "Add" => "Jenkins"=>Kind:"SSH username with private key"**
    - **Enter the ID, Description, username**
    - **To add the key, select "Enter Directly" => select "add" => paste the private key into the white box and save.**

- Availability: **keep this agent online as much as possible**
- **Host key verification strategy: non verifying verification strategy**

awsDeploy

Name ?

awsDeploy

Description ?

Deployment server

Number of executors ?

1

Remote root directory ?

/home/ubuntu/agent

Labels ?

awsDeploy

Usage ?

Only build jobs with label expressions matching this node

Launch method ?

Launch agents via SSH

Host ?

54.163.30.187

Credentials ?

ubuntu (SSH-CALI)

+ Add

Host Key Verification Strategy ?

Non verifying Verification Strategy ?

Advanced...


Credentials
ubuntu (SSH-CALI)
Add
Jenkins
Non verifying Verification Strategy

Jenkins Credentials Provider: Jenkins

Add Credentials

Domain

Global credentials (unrestricted)

Kind

Username with password

Username with password
AWS Credentials
GitHub App
SSH Username with private key
Secret file
Secret text
Certificate

Username ?

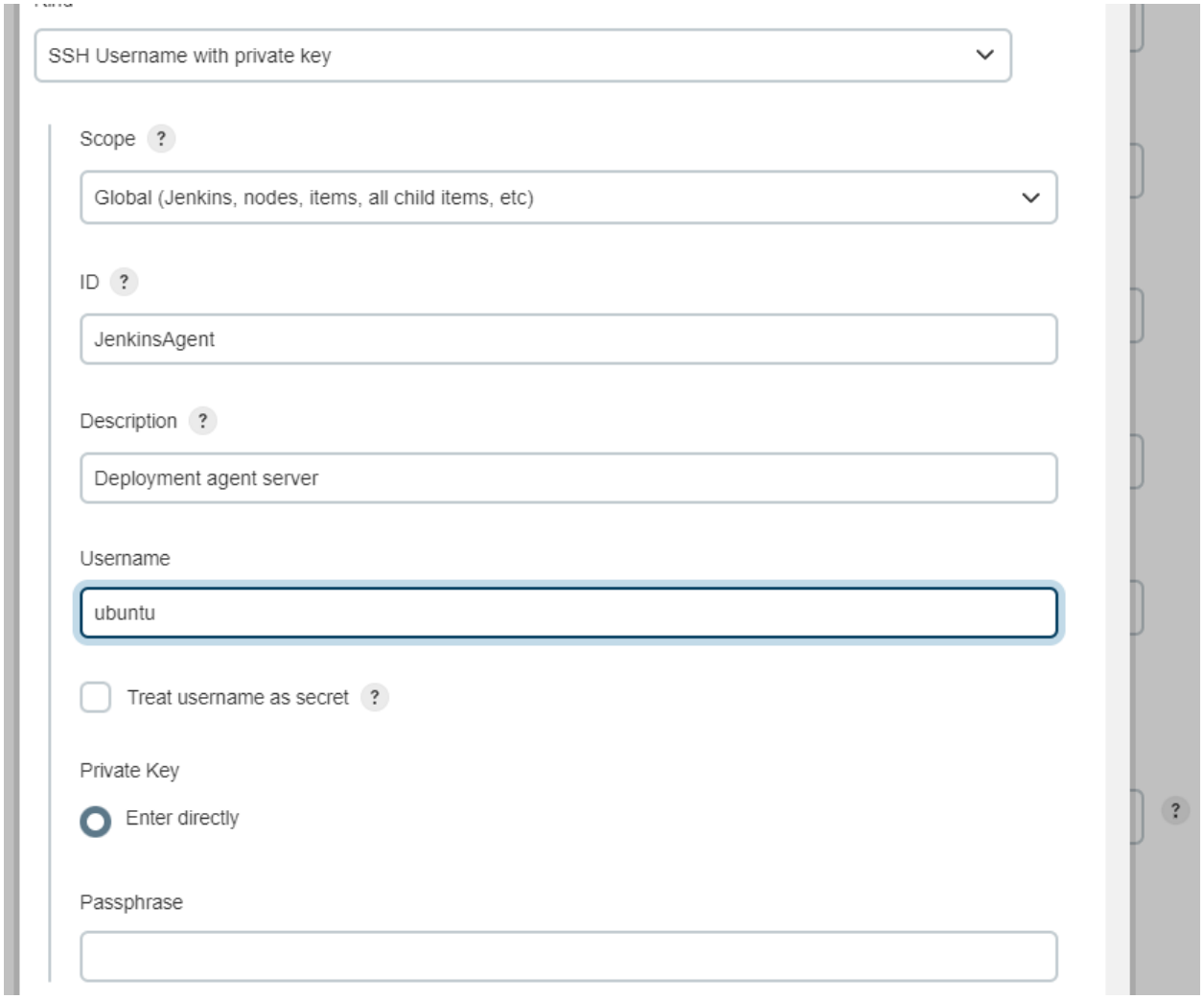
Treat username as secret ?

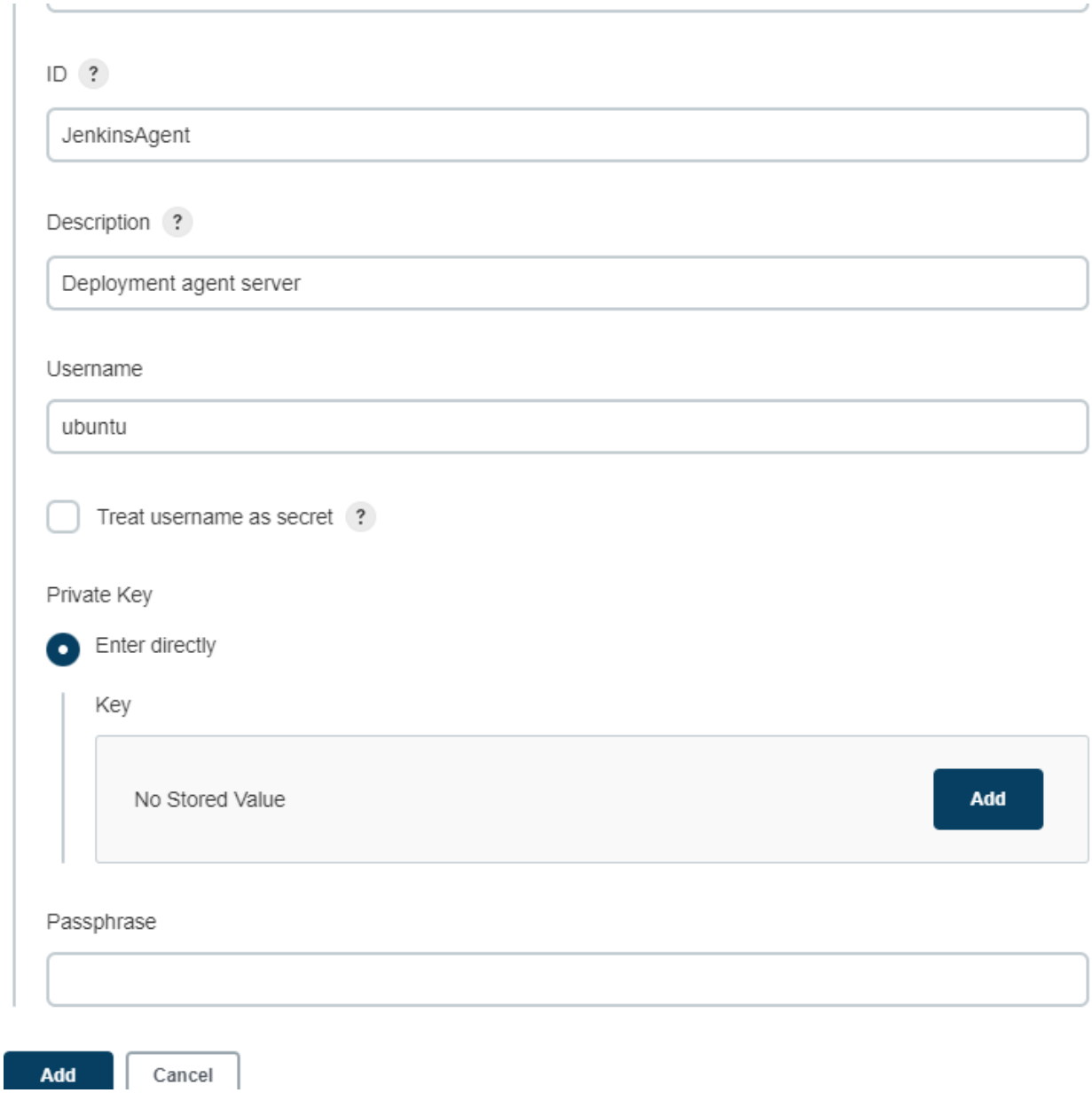
Password ?

ID ?

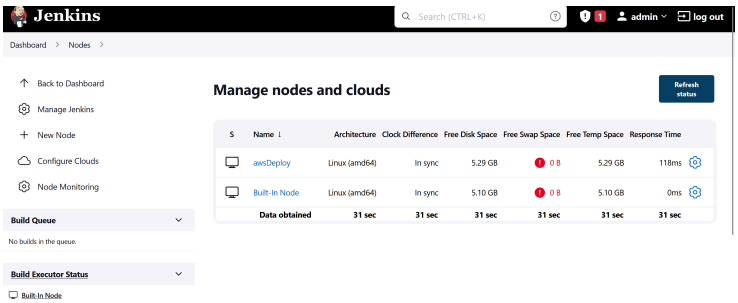
Description ?

Add Cancel


SSH Username with private key
Scope
Global (Jenkins, nodes, items, all child items, etc)
ID
JenkinsAgent
Description
Deployment agent server
Username
ubuntu
Treat username as secret
Private Key
Enter directly
Passphrase



- I saved the configurations but Jenkins agent failed to launch because the credentials failed to authenticate. It turns out that I was missing a dash from the pem file. When I added the dash, the credentials authenticated and the Jenkins agent launched. Please see what my agent looked like below:



4.To create a Pipeline build in Jenkins:

- I first SSH'ed into the EC2 in my public VPC and used sudo to nano'ed into the “/etc/nginx/sites-enabled/default” file.
- In the file, I changed the port from 80 to 5000:

```
server {
        listen 5000;
        listen [::]:5000;
```

- I then scrolled down to “location” and replaced it with the text below:

```
location / {proxy_pass http://127.0.0.1:8000;
            proxy_set_header Host $host;
            proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;
        # First attempt to serve request as file, then
        # as directory, then fall back to displaying a 404.
        try_files $uri $uri/ =404;
}
```

- Next I edited the Jenkinsfile in my repo to the script below:

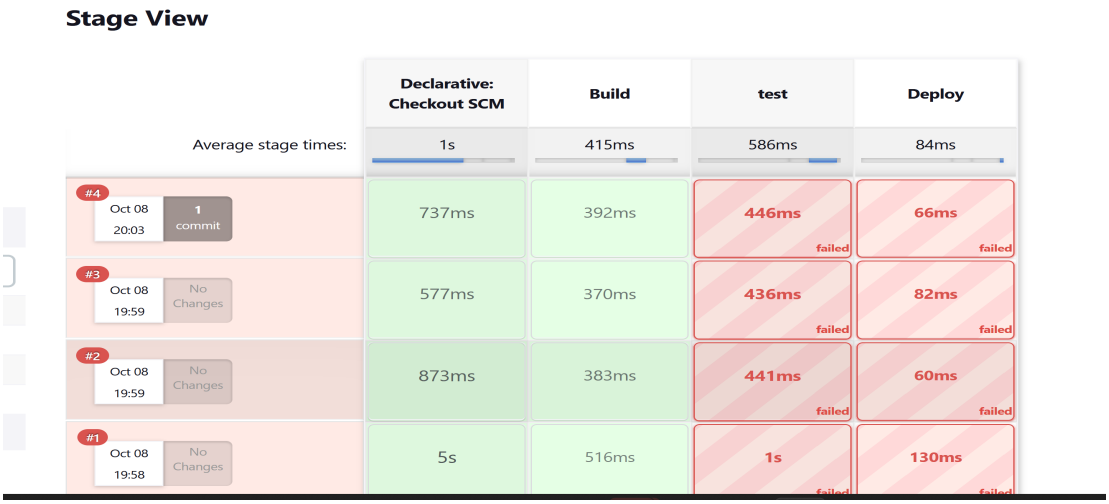
```
pipeline {
  agent any
   stages {
    stage ('Build') {
      steps {
        sh '''#!/bin/bash
        python3 -m venv test3
        source test3/bin/activate
        pip install pip --upgrade
        pip install -r requirements.txt
        export FLASK_APP=application
        flask run &
        '''
     }
   }
    stage ('test') {
      steps {
        sh '''#!/bin/bash
        source test3/bin/activate
        py.test --verbose --junit-xml test-reports/results.xml
        '''
      }

      post{
        always {
          junit 'test-reports/results.xml'
        }

      }
```

```
    }
    stage ('Deploy') {
      agent{label 'awsDeploy'}
      steps {
        sh '''#!/bin/bash
        git clone https://github.com/kura-labs-org/kuralabs_deployment_2.git
        cd ./kuralabs_deployment_2
        python3 -m venv test3
        source test3/bin/activate
        pip install -r requirements.txt
        pip install gunicorn
        gunicorn -w 4 application:app -b 0.0.0.0 --daemon
        '''
      }
    }
  }
}
```

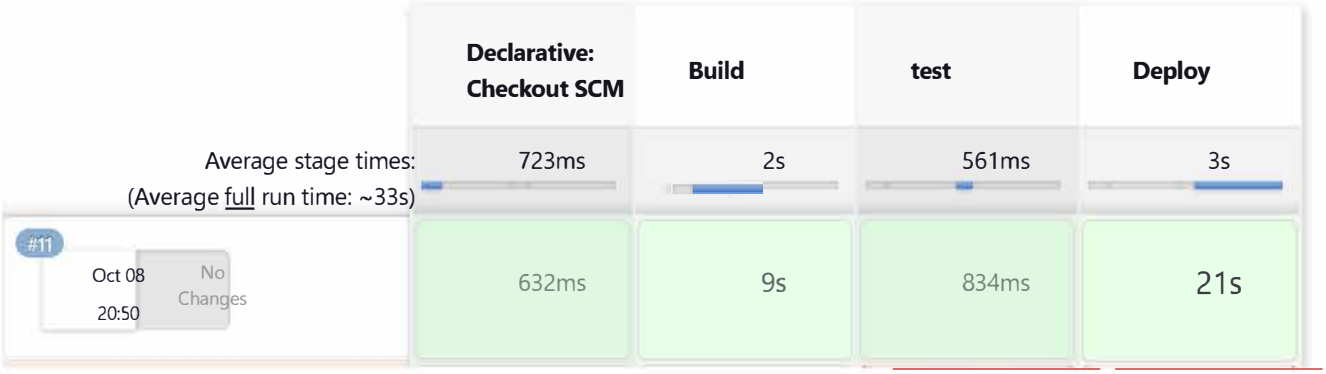
- I configured a multi branch pipeline in Jenkins and connected Jenkins to my GitHub Repo but the build failed



Once I installed the python virtual environment on Jenkins, the build was successful but the url shortner website would not come up. Once I modified the Jenkinsfile with the keep node running command, I was able to have a successful build and I was able to deploy the url shortener website.

Also, I added the greeting modification from Deployment 2 to test file and I was able to have a successful build. Please see the screenshot below.

Stage View


Declarative: Checkout SCM
Build
test
Deploy
Average stage times:
(Average full run time: ~33s)
723ms
2s
561ms
3s
#11
Oct 08
20:50
No Changes
632ms
9s
834ms
21s