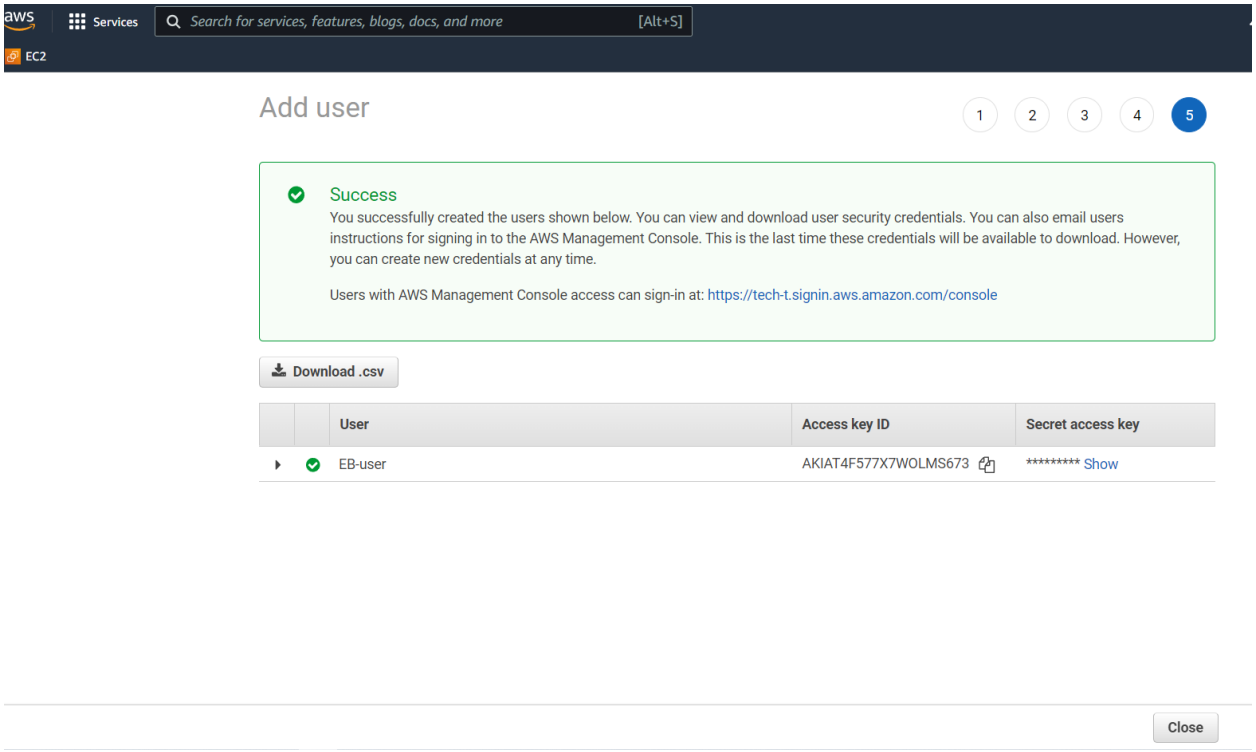
Deployment #2

Step 1:I installed Jenkins on an EC2

Step 2: I activated the Jenkins user on the EC2

```
$sudo passwd jenkins
$sudo su - jenkins -s /bin/bash
```

Step 3: Created a Jenkins user in my AWS account through IAM



Step 4: Install AWS CLI on the Jenkins EC2 and configure:

- Using the curl command I downloaded AWS CLI files from the AWS CLI website
- Issues: I had difficulty with this step because the user was not part of the sudoers list and unzip was not installed on the jenkins user
- So I had to exit the jenkins user, and add jenkins to sudoers on the ubuntu EC2.
- Then as a Jenkins user I installed the unzip command and proceeded to configure.

```
$sudo usermod -aG sudo jenkins
$sudo su - jenkins -s /bin/bash
$curl "https://awscli.amazonaws.com/awscli-exe-
linux-x86_64.zip" -o "awscliv2.zip"
$sudo apt install unzip
```

Step 5: Install EB CLI in the jenkins EC2 user:

- **Issues: I tried to install EB CLI but my jenkins user did not have the pip command**

- **So I had to install the pip command using $sudo apt install python3-pip**

- **Then, I used the below commands to install the EB CLI in the Jenkins EC2**

- **$nano .bashrc**

- **I entered the following commands into the bash.rc export PATH="/var/lib/jenkins/.local/bin:$PATH"**
- **I then was able to install AWS EB CLI with the below command**

```
$pip install awsebcli --upgrade --user
 $eb --versio
```

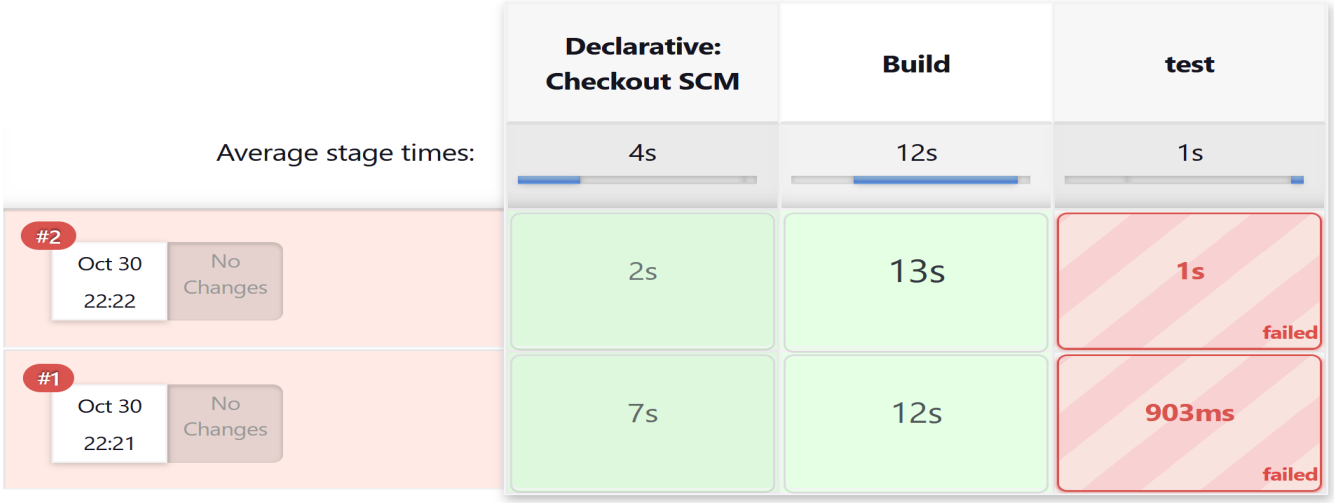
Step 6: Connect GitHub to Jenkins Server:

- I first forked the Deployment repo: https://github.com/kura-labs-org/kuralabs_deployment_2.git
- Next, I connected my Github credentials to Jenkins using an access token from GitHub.

Step 7: I built a mulitbranch pipeline on Jenkins

- I clicked Build Now. ANd found that my first two builds failed.

Stage View

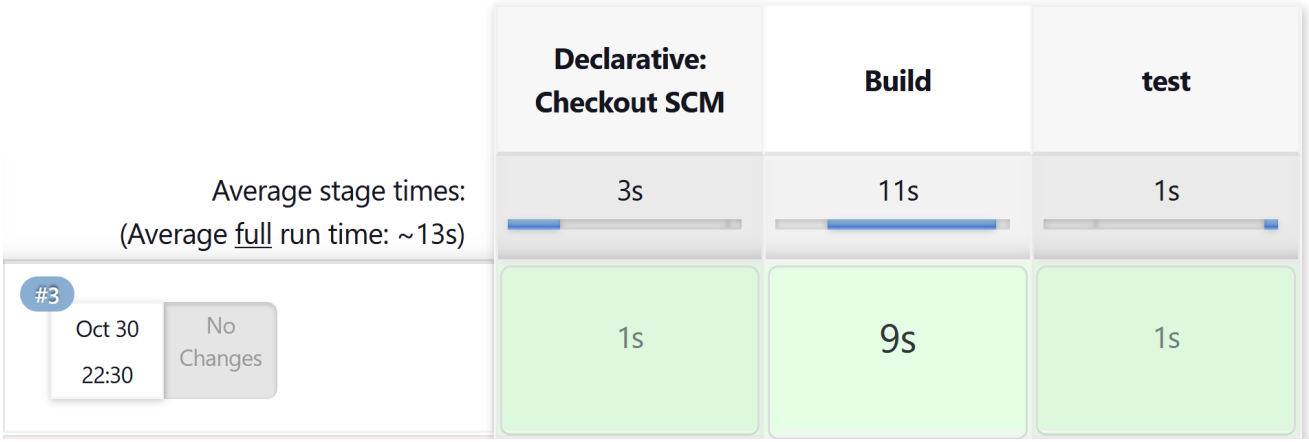


- I checked the logs and found that I needed to install python on my EC2.

```
ubuntu@ip-172-31-31-68:~$ sudo  apt install python3.10-venv
```

- After I installed python, I ran the Build again and the Build was successful.

Stage View



Step 8: Deploy the application from Elastic Beanstalk CLI:

- I used sudo to initialize the jenkins user again.
- I changed to directories in order to enter the workspace where the url-shortener_main is located
- I ran $pip install awsebcli --upgrade --user
- Then, I ran export PATH="/var/lib/jenkins/.local/bin: $PATH"

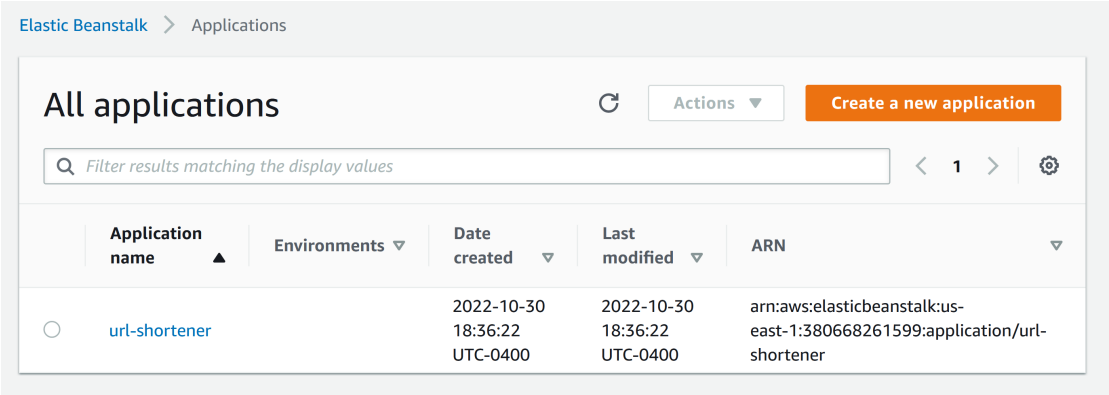
```
$sudo su - jenkins -s /bin/bash
$cd workspace/url-shortener_main/
$eb init
```

- Select: us-east-1
- Press enter
- Select application to use: url-shortener3
- Select: Python
- Select: (The latest version of python available)
- Select: N (for CodeCommit)
- Set up SSH for instance: Yes
- Select keypair: I selected the keypair ssh2

```
$eb create
```

- I entered the default for the next 3 questions by hitting enter.
- My environment name was url-shortener-dev.

- Spot Fleet: No
- I waited for the application to be made.



Step 9 I added a deployment stage to the pipeline in the Jenkinsfile:

```
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') {
      steps {
        sh '/var/lib/jenkins/.local/bin/eb deploy url-shortener-dev'

      }
    }
  }
}
```

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Step 10: I added an extra test to the pipeline.

- I added the below code to the test_app.py file

```
# def test_fast():
#   b = "Bobby"
#   new_greeting = greet(b)
#   assert new_greeting == "Good Evening Bobby"

def test_home_page():

response = app.test_client().get('/')
assert response.status_code == 200
```

- I built the pipeline again and the test ran successfully.

What could have been done differently:

- To install the eb command I could have added the path to the bash.rc file so that eb would have been added to my path. Since I only installed the eb on the Jenkins user, it needed to be reinstalled every time I stopped and restarted the instance.

- To prevent my initial build from failing, I should have installed python on my EC2, especially because the url-shortener is a python application.