DevOps

Containerization, CI/CD & Monitoring

February 2022

Regular Exam

Exam

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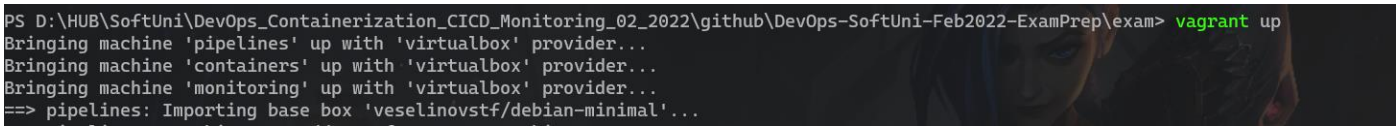
Solution Steps

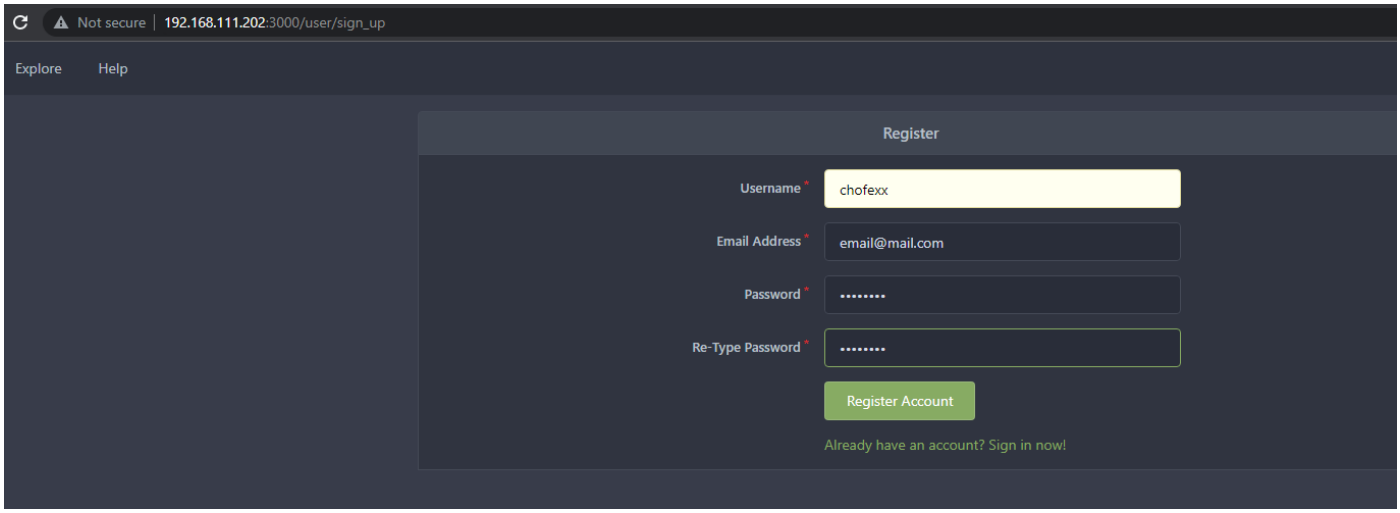
➢ Host Machine - Windows 10 Pro 21H2 19044.1526

- Run **vagrant up** in project folder

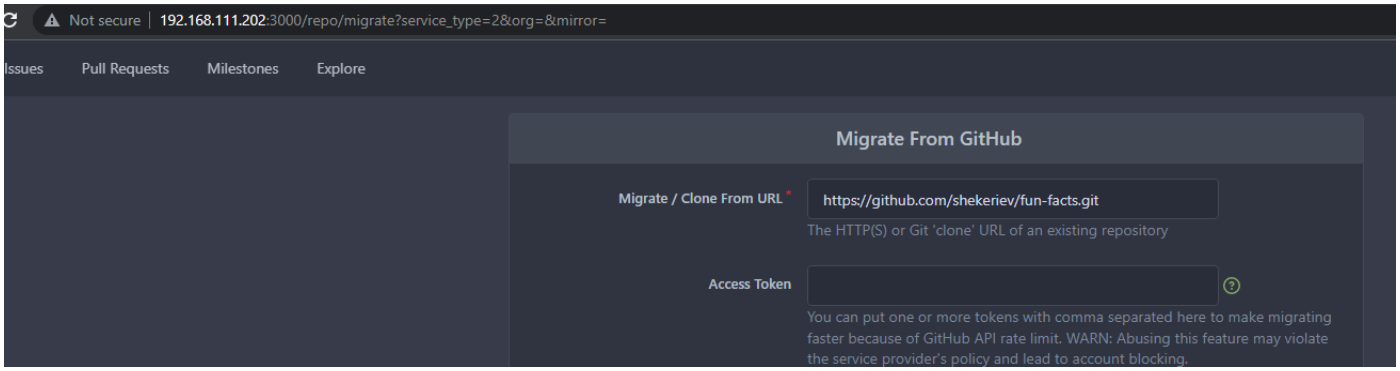


NOTE: Beware of network errors while vagrant is bringing up the vm's!

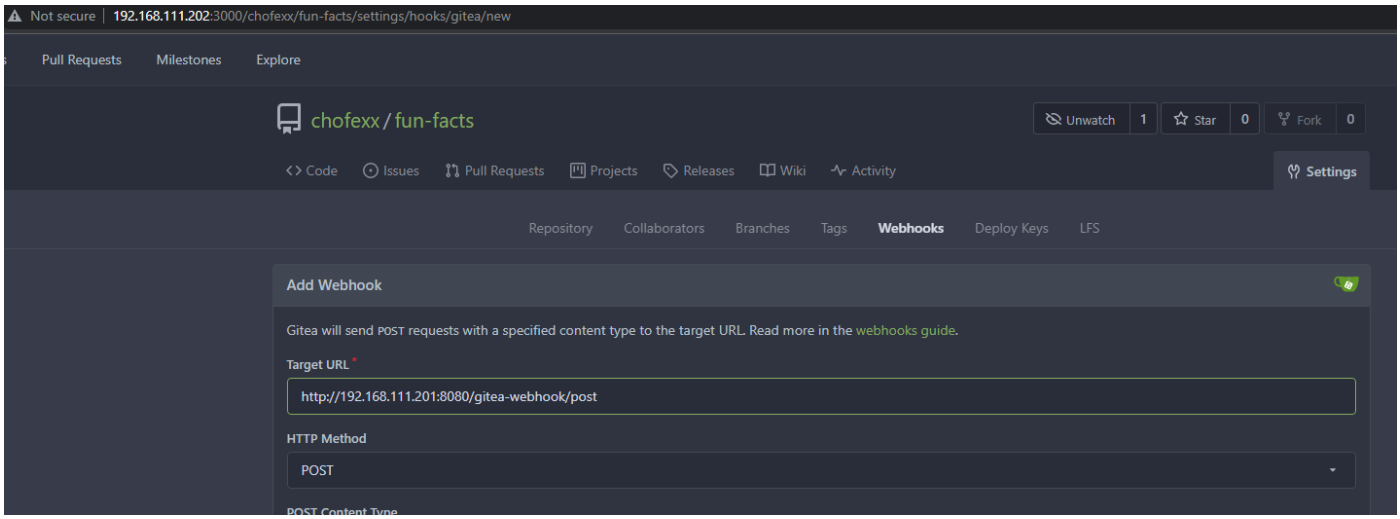
- Create Gitea User: chofexx with password: password - http://192.168.111.202:3000/user/sign_up



- Create New Migration From GitHub repository - https://github.com/shekeriev/fun-facts.git



- Create Webhook for repository –
  - http://192.168.111.202:3000/chofexx/fun-facts/settings/hooks
  - Target URL: http://192.168.111.201:8080/gitea-webhook/post

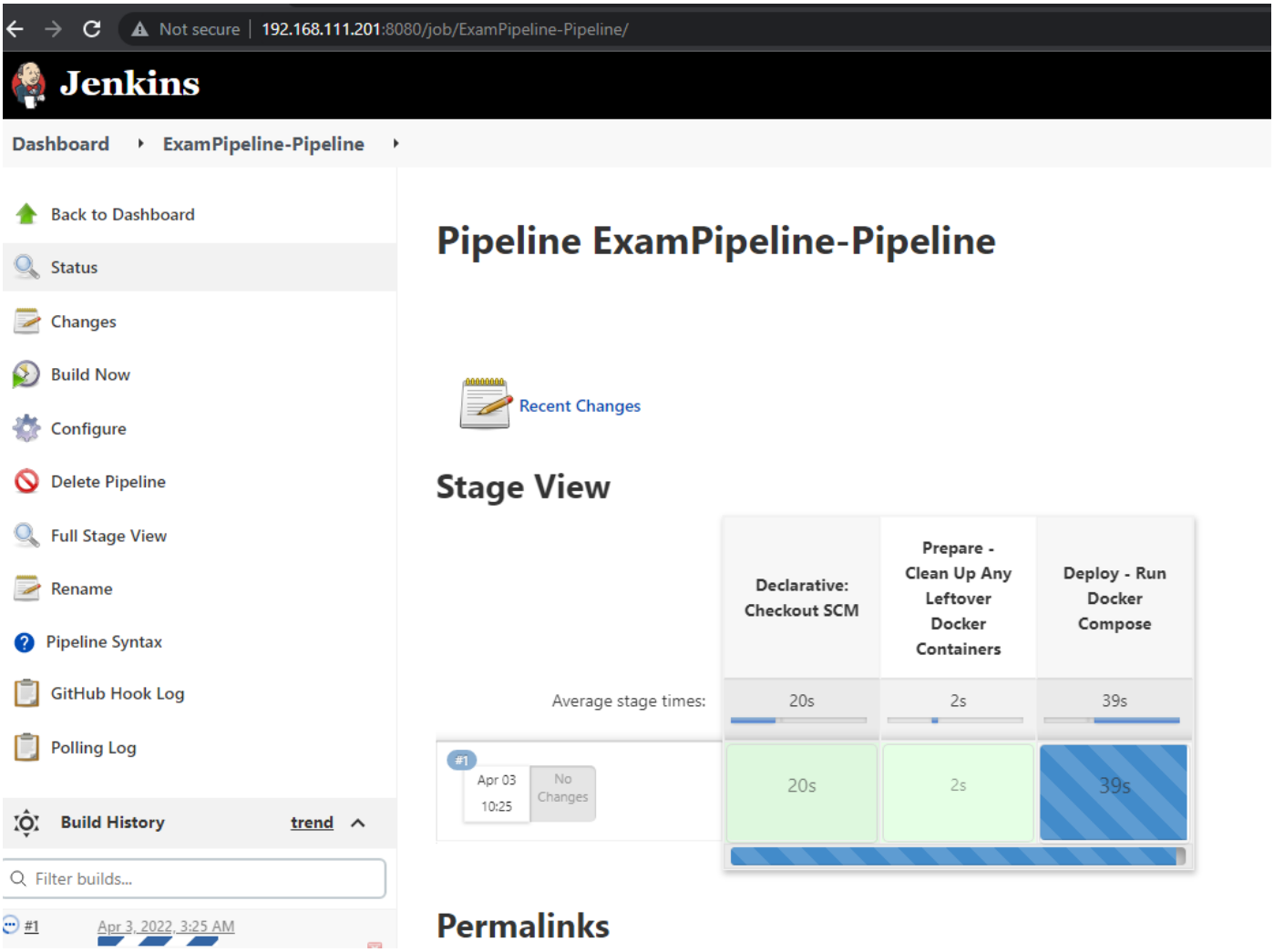


- Connect to containers vm - **vagrant ssh containers** – NOTE: don't forget to commit **.env** file

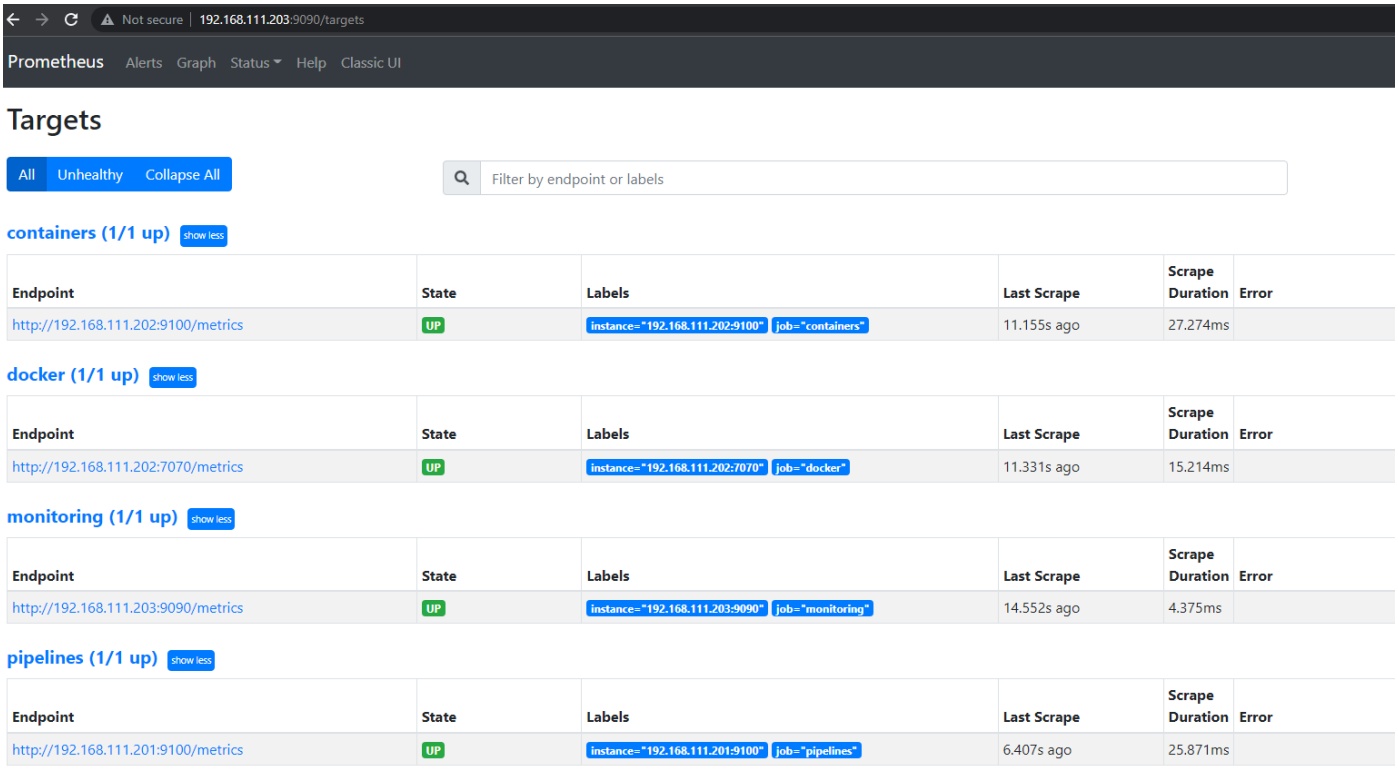
```
git clone http://192.168.111.202:3000/chofexx/fun-facts.git
cd fun-facts/
cp /vagrant/src/app/docker-compose.Production.yml docker-compose.Production.yml
cp /vagrant/src/app/docker-compose.Development.yml docker-compose.Development.yml
cp /vagrant/src/app/Jenkinsfile Jenkinsfile
git commit -m "Adding CI/CD"
git push
        Username for 'http://192.168.150.102:3000': chofexx
        Password for 'http://chofexx@192.168.150.102:3000': password
cp /vagrant/src/app/.env .env
git add .env
git commit –m “Adding .env”
git push
        Username for 'http://192.168.150.102:3000': chofexx
        Password for 'http://chofexx@192.168.150.102:3000': password
```

```
PS D:\HUB\SoftUni\DevOps_Containerization_CICD_Monitoring_02_2022\github\DevOps-SoftUni-Feb2022-ExamPrep\exam> vagrant ssh containers
Linux containers 5.10.0-11-amd64 #1 SMP Debian 5.10.92-1 (2022-01-18) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Thu Feb 10 13:13:01 2022 from 10.0.2.2
vagrant@containers:~$ git clone http://192.168.111.202:3000/chofexx/fun-facts.git
cd fun-facts/
cp /vagrant/src/app/docker-compose.Production.yml docker-compose.Production.yml
cp /vagrant/src/app/docker-compose.Development.yml docker-compose.Development.yml
cp /vagrant/src/app/Jenkinsfile Jenkinsfile
git add *
git commit -m "Adding CI/CD"
git push
Cloning into 'fun-facts'...
remote: Enumerating objects: 26, done.
remote: Counting objects: 100% (26/26), done.
remote: Compressing objects: 100% (22/22), done.
remote: Total 26 (delta 0), reused 26 (delta 0), pack-reused 0
Receiving objects: 100% (26/26), 108.25 KiB | 12.03 MiB/s, done.
[main 1526d98] Adding CI/CD
 Committer: vagrant <vagrant@containers.do1.exam>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 3 files changed, 158 insertions(+)
 create mode 100755 Jenkinsfile
 create mode 100755 docker-compose.Development.yml
 create mode 100755 docker-compose.Production.yml
Username for 'http://192.168.111.202:3000': chofexx
Password for 'http://chofexx@192.168.111.202:3000':
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 1.45 KiB | 494.00 KiB/s, done.
Total 5 (delta 1), reused 0 (delta 0), pack-reused 0
remote: . Processing 1 references
remote: Processed 1 references in total
To http://192.168.111.202:3000/chofexx/fun-facts.git
   4f58c69..1526d98  main -> main
```

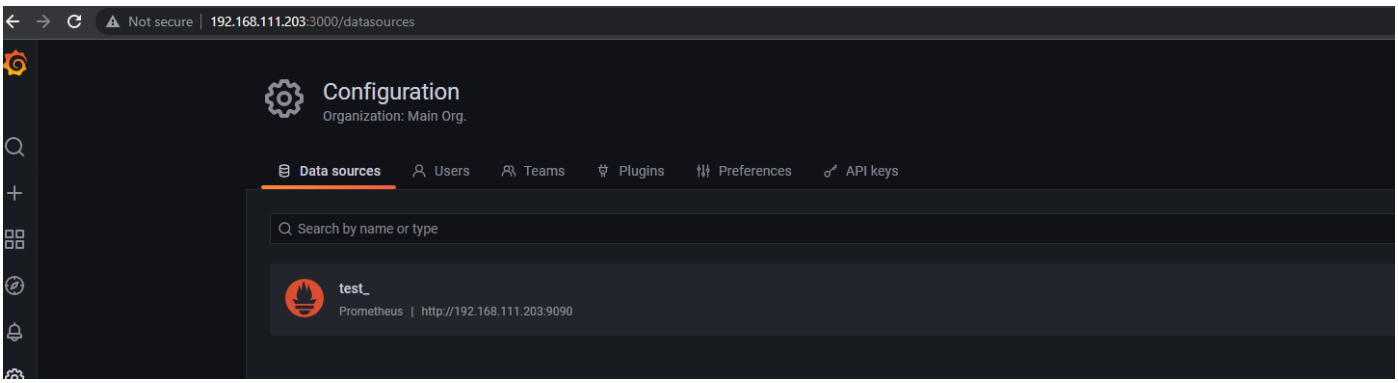
- Go to http://192.168.111.201:8080/ and login – admin/admin
    - – Build Now –initial build – every next build is going to be trier by repository change



    - make change in project repo - push
    - check if Jenkins is building the job
- Check Prometheus targets - http://192.168.111.203:9090/targets

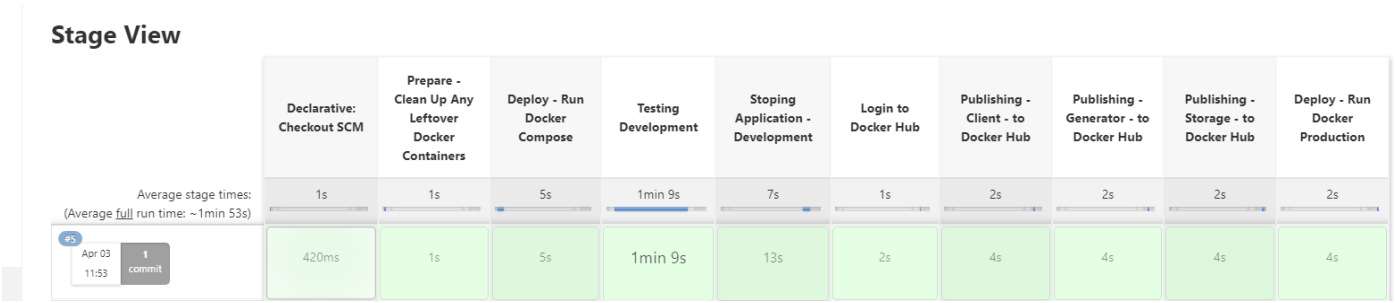


- Login to Grafana -> http://192.168.111.203:3000/ use admin/admin
  - Change admin password
  - Check if data sorce is set-up correctly

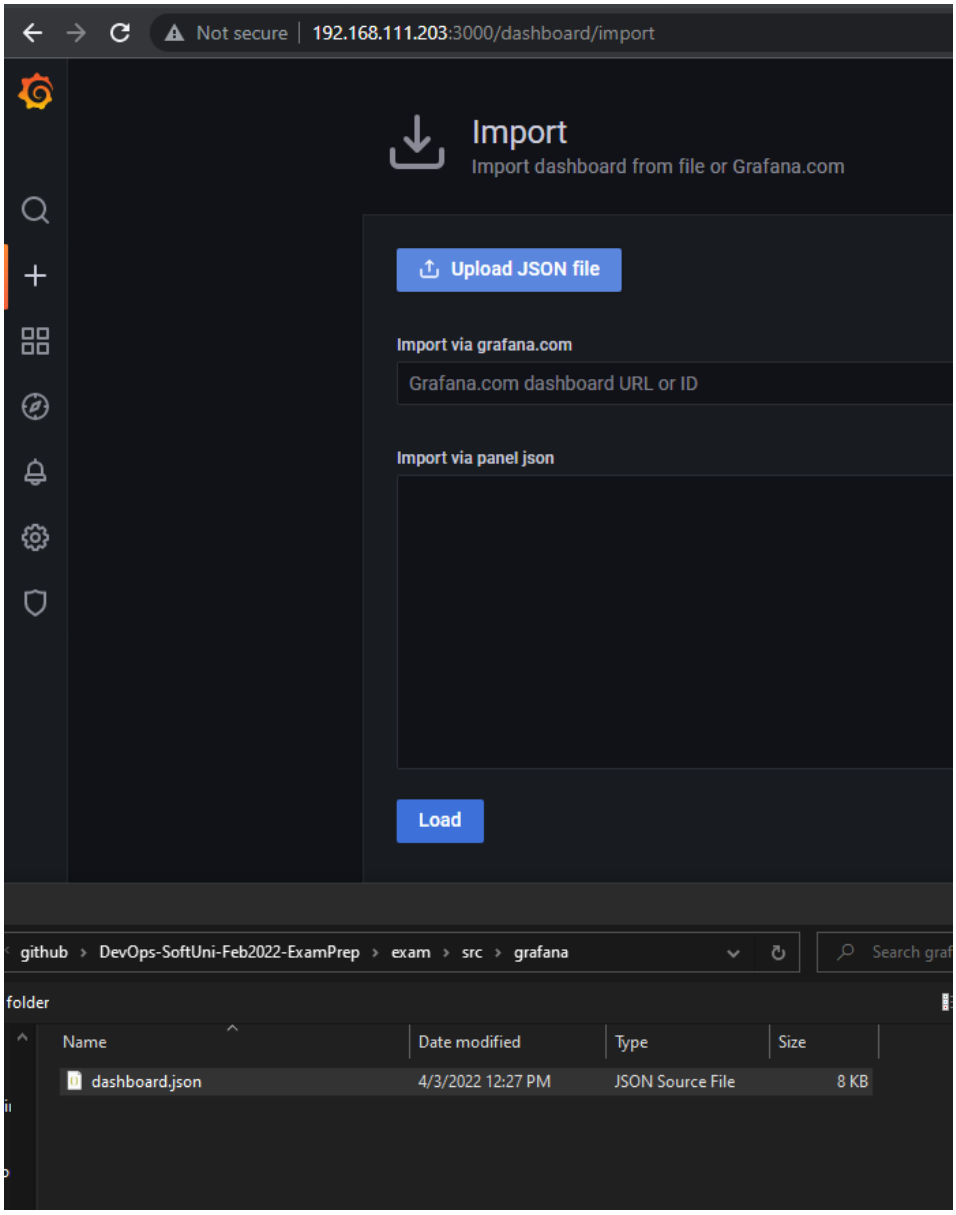


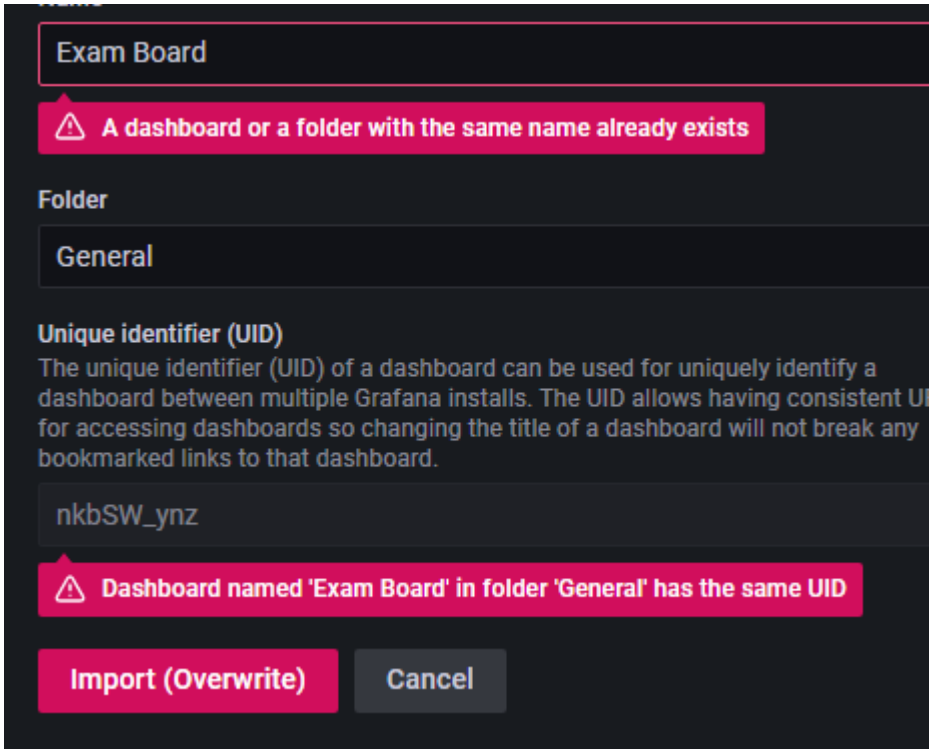
- Go back to browser and check if app is running in production (when Jenkins finish building the job)

- Check Jenkins

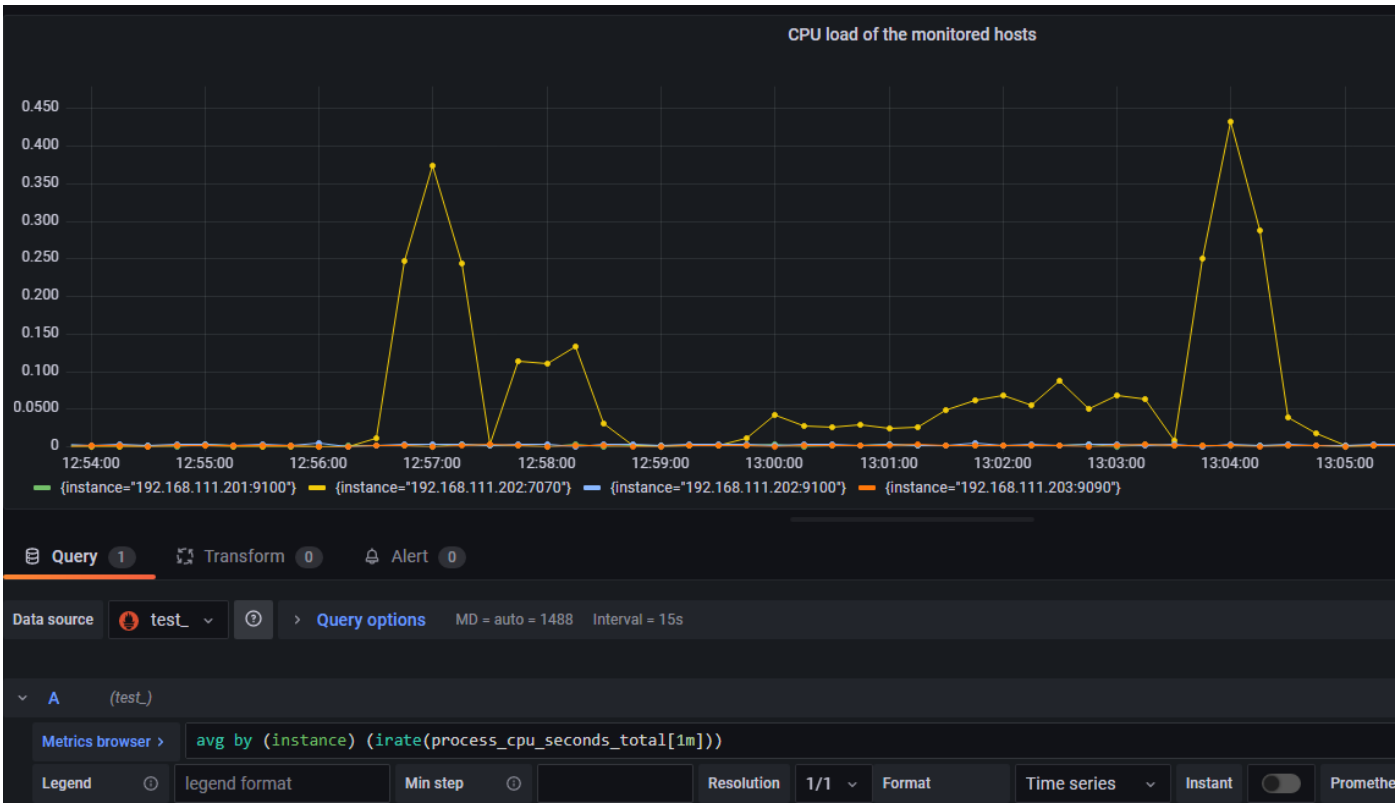


- Go to Grafana - From menu – Dashboard/Browse and click Import Dashboard.
  Click Upload and select \src\grafana\ dashboard.json. Change name or UID if error accures

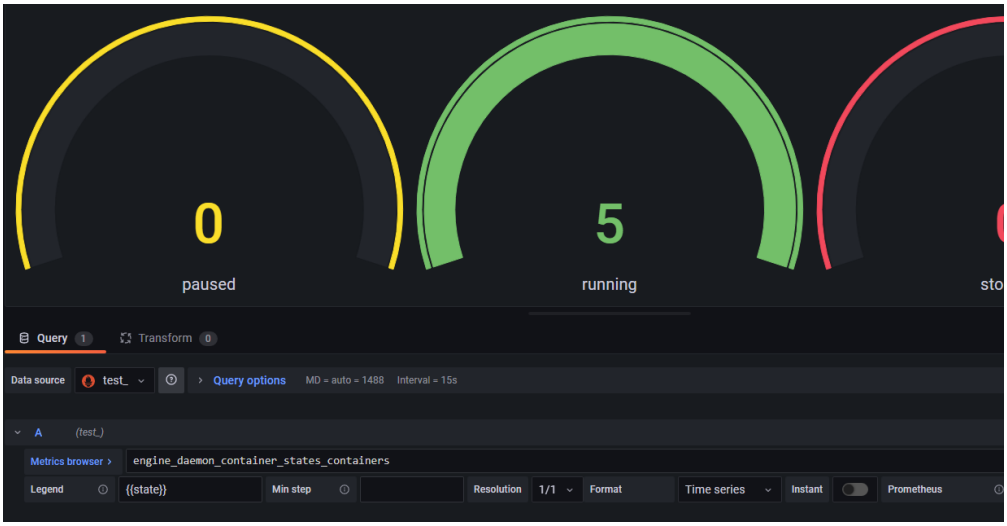




- Check the dashboard – Dashboard/Browse/Exam Board
  - Check – Edit on each Panel
  - CPU load of the monitored hosts - avg by (instance) (irate(process_cpu_seconds_total[1m]))



  - Containers - engine_daemon_container_states_containers



- RAM utilization of the monitored hosts - node_memory_Active_bytes