Trabalho Fase 4 | Containerization Strategy

1. URLs usadas nas aulas

Openshift 1 (blog + banco de dados + hpa): https://console-openshift-console.apps.na46a.prod.ole.redhat.com/topology/ns/rm343626/graph

Openshift 2 (CI/CD com Github): https://console-openshift-console.apps.na46a.prod.ole.redhat.com/topology/ns/rm343626-express-ts/graph

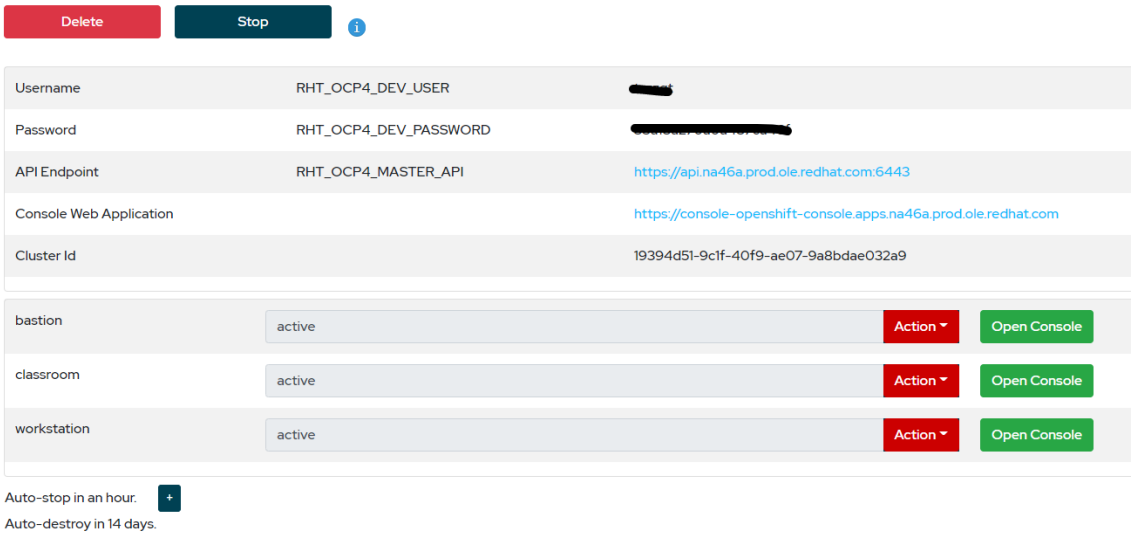
Blog: http://blog-django-py-git-rm343626.apps.na46a.prod.ole.redhat.com

Imagem (Quayo.io): https://quay.io/repository/zarantonello/do180-custom-httpd?tab=history

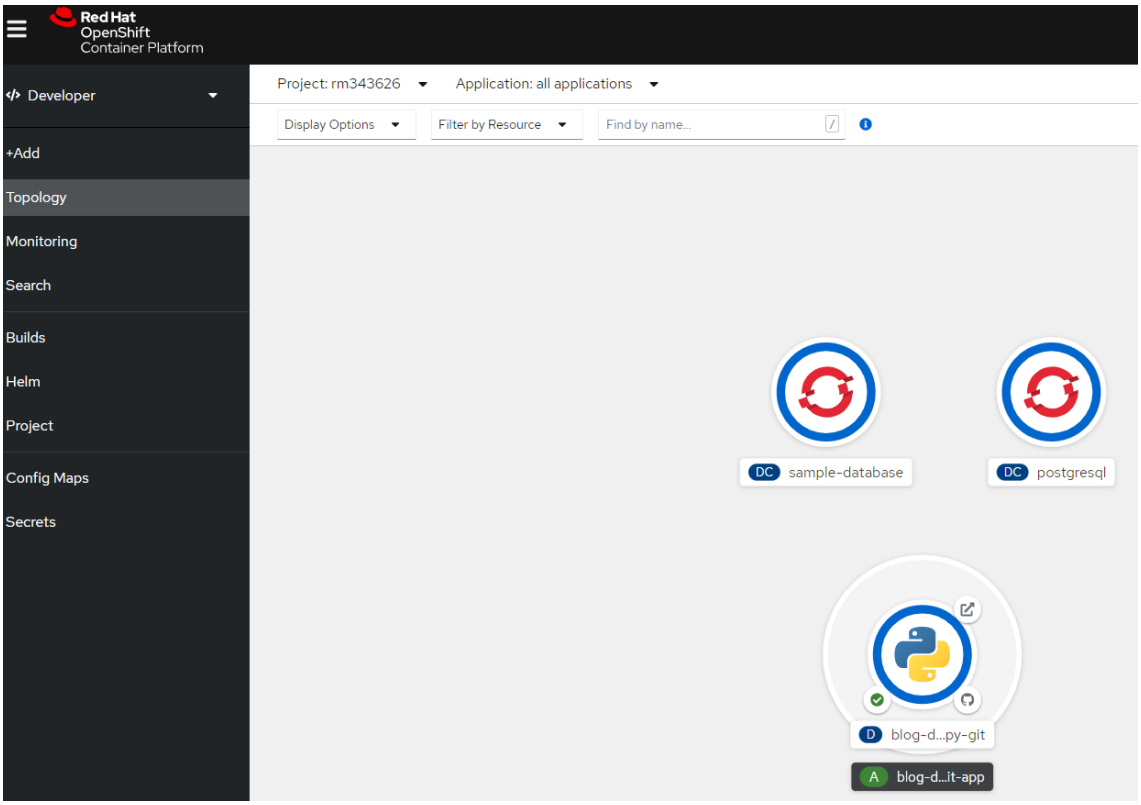
Github: https://github.com/zarantonello/express-ts

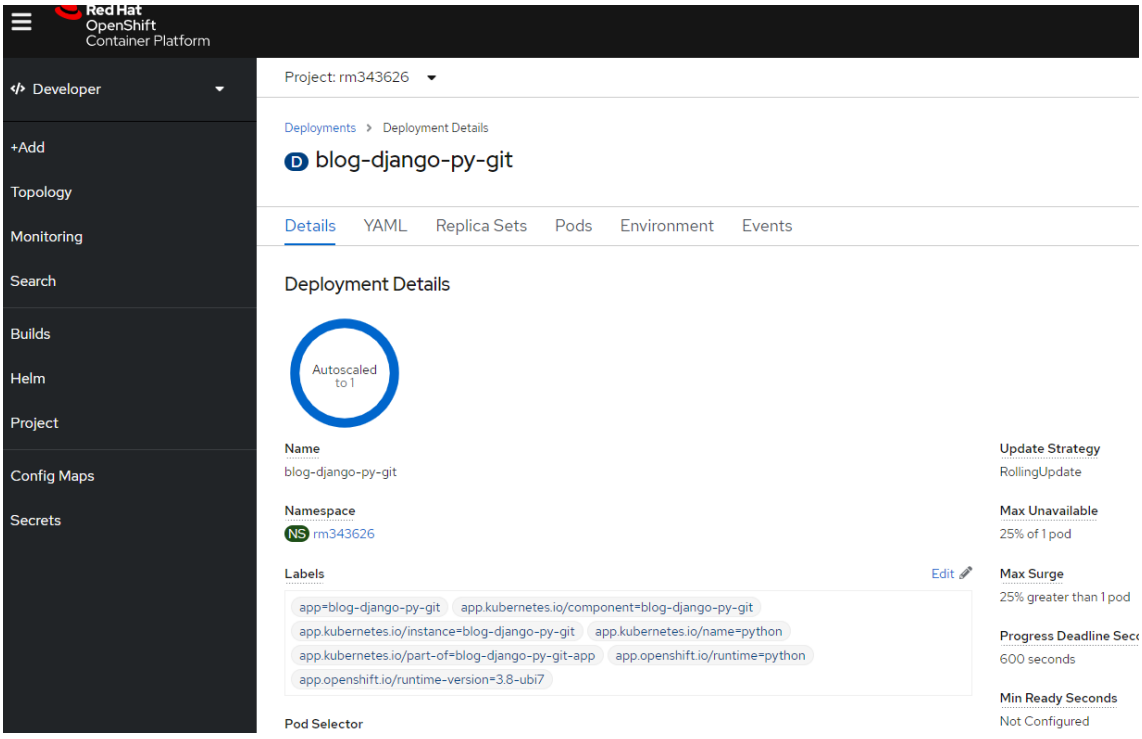
Snyk: https://app.snyk.io/org/zarantonello/

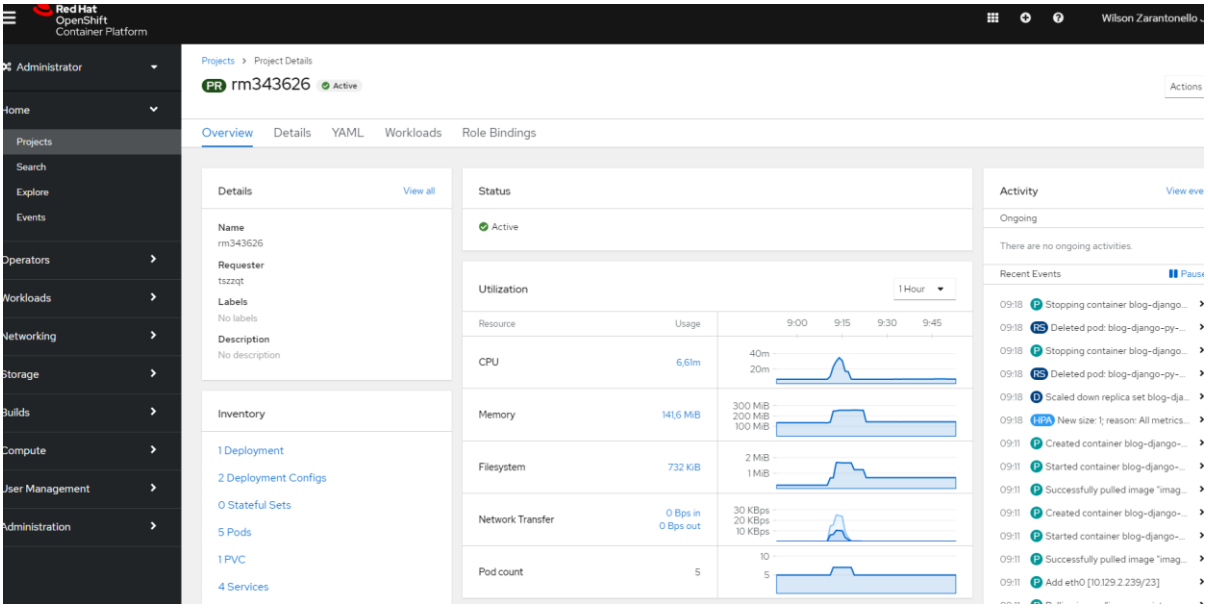
2. Console criada no ambiente do Openshift



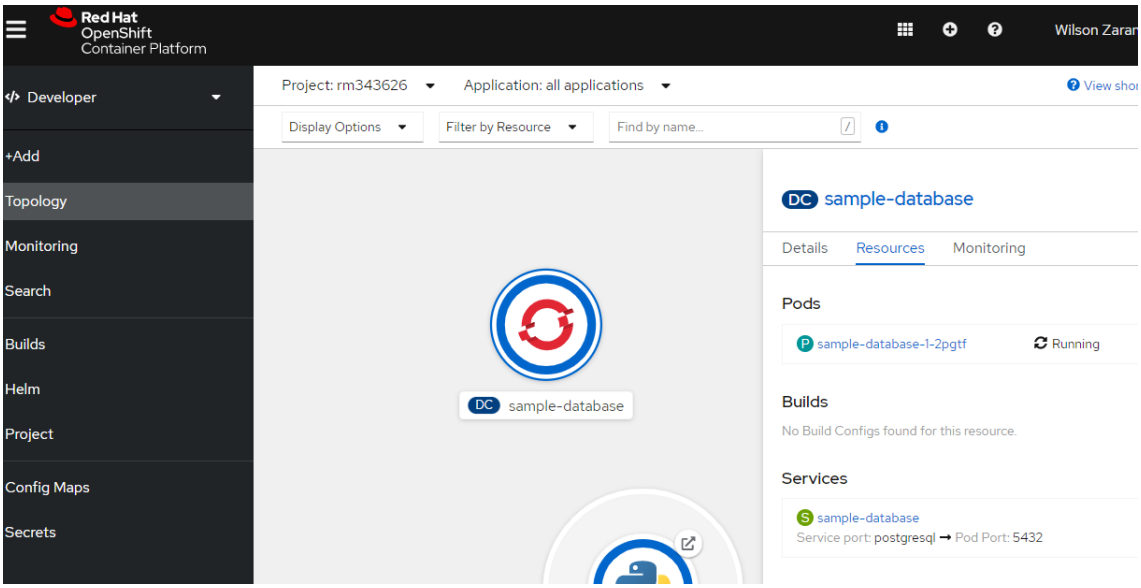
3. Criação/provisionamento do projeto blog-django-py-git no Openshift

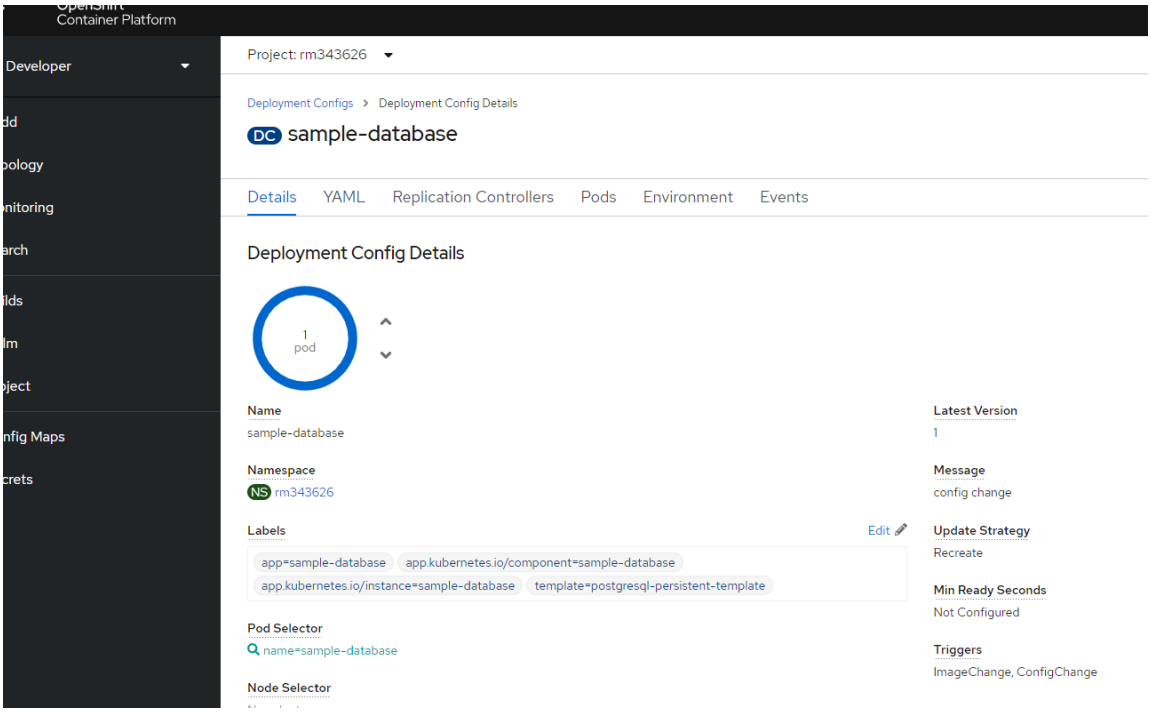


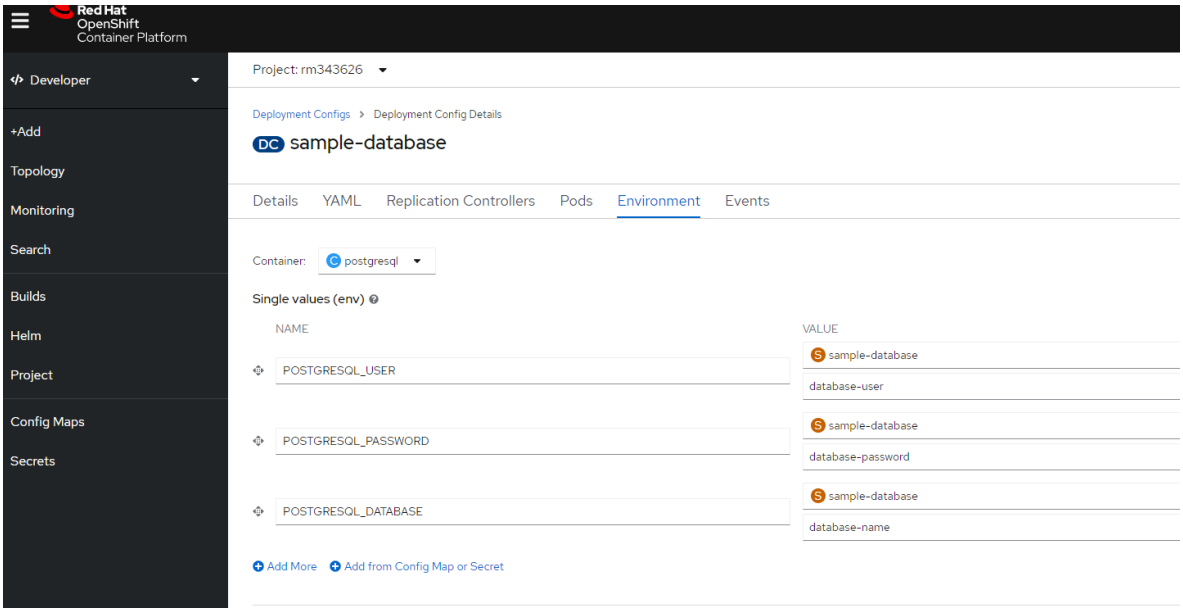



Red Hat
OpenShift
Container Platform
Wilson Zarantonello
Administrator
Home
Projects
Search
Explore
Events
Operators
Workloads
Networking
Storage
Builds
Compute
User Management
Administration
Projects > Project Details
PR rm343626
Active
Actions
Overview
Details
YAML
Workloads
Role Bindings
Details
View all
Name
rm343626
Requester
tszzqt
Labels
No labels
Description
No description
Inventory
1 Deployment
2 Deployment Configs
0 Stateful Sets
5 Pods
1 PVC
4 Services
Status
Active
Utilization
1 Hour
Resource
Usage
9:00
9:15
9:30
9:45
CPU
6,61m
40m
20m
Memory
141,6 MiB
300 MiB
200 MiB
100 MiB
Filesystem
732 KiB
2 MiB
1 MiB
Network Transfer
0 Bps in
0 Bps out
30 KBps
20 KBps
10 KBps
Pod count
5
10
5
Activity
View eve
Ongoing
There are no ongoing activities.
Recent Events
Pause
09:18 Stopping container blog-django...
09:18 Deleted pod: blog-django-py-...
09:18 Stopping container blog-django...
09:18 Deleted pod: blog-django-py-...
09:18 Scaled down replica set blog-dja...
09:18 New size: 1; reason: All metrics...
09:11 Created container blog-django-...
09:11 Started container blog-django-...
09:11 Successfully pulled image "imag...
09:11 Created container blog-django-...
09:11 Started container blog-django-...
09:11 Successfully pulled image "imag...
09:11 Add eth0 [10.129.2.239/23]

4. Criação do banco de dados do blog

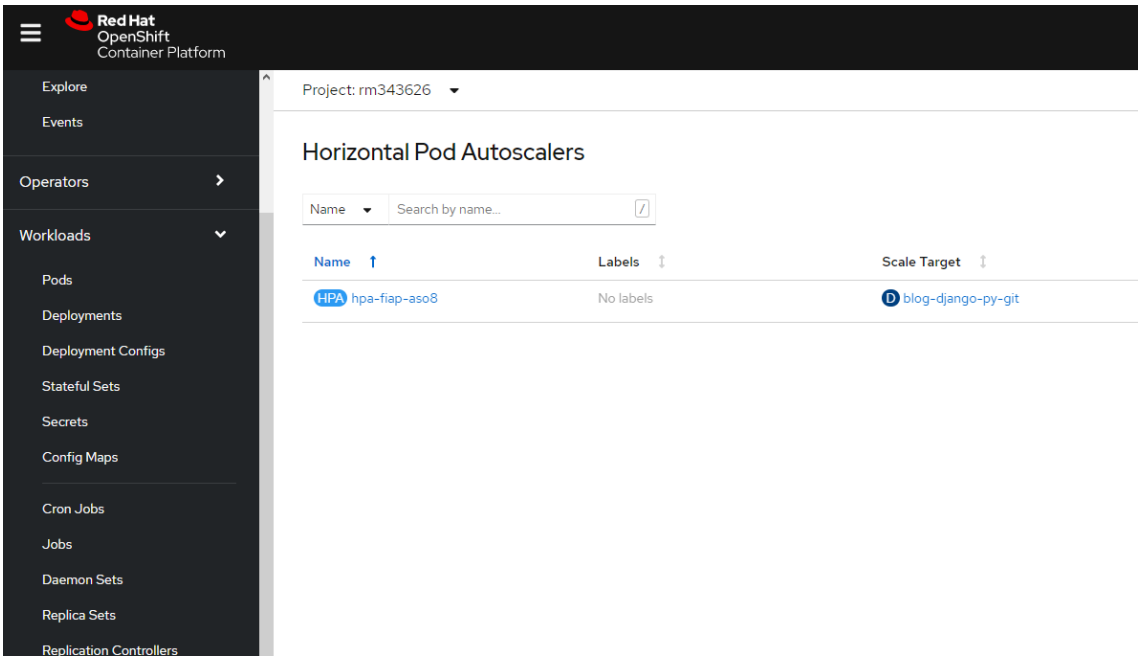






```
C:\Users\wilso\Downloads\openshift-client-windows>oc get pods
NAME                                READY   STATUS      RESTARTS   AGE
blog-django-py-git-1-build          0/1     Completed   0          3d20h
blog-django-py-git-6b4fdfcd97-bxjnd   1/1     Running     0          3d19h
postgresql-1-vcx7g                  1/1     Running     0          4d17h
sample-database-1-2pgtf             1/1     Running     0          3d20h
sample-database-1-deploy            0/1     Completed   0          3d20h
```

5. Configuração do HPA para o blog



hpa.yaml

C: > Users > wilso > OneDrive > Universidade > MBA > Fase 4 > Hands-on Lab > hpa.yaml

```yaml
apiVersion: autoscaling/v2beta2
kind: HorizontalPodAutoscaler
metadata:
  name: hpa-fiap-aso8
  namespace: rm343626
spec:
  scaleTargetRef:
    apiVersion: apps/v1
    kind: Deployment
    name: blog-django-py-git
  minReplicas: 1
  maxReplicas: 3
  metrics:
    - type: Resource
      resource:
        name: cpu
        target:
          averageUtilization: 50
          type: Utilization
```

```
C:\Users\wilso\Downloads\openshift-client-windows>oc get hpa
NAME           REFERENCE                       TARGETS   MINPODS   MAXPODS   REPLICAS   AGE
hpa-fiap-aso8   Deployment/blog-django-py-git   0%/50%    1         3         1          41h
```

6. Teste de stress

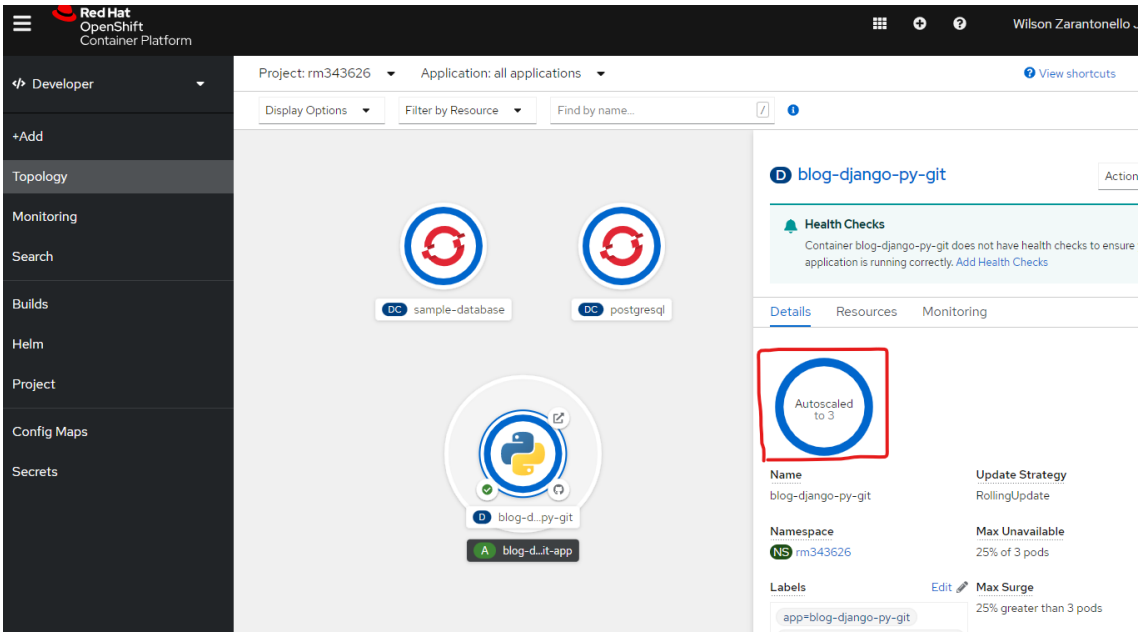
stress-test.json 1

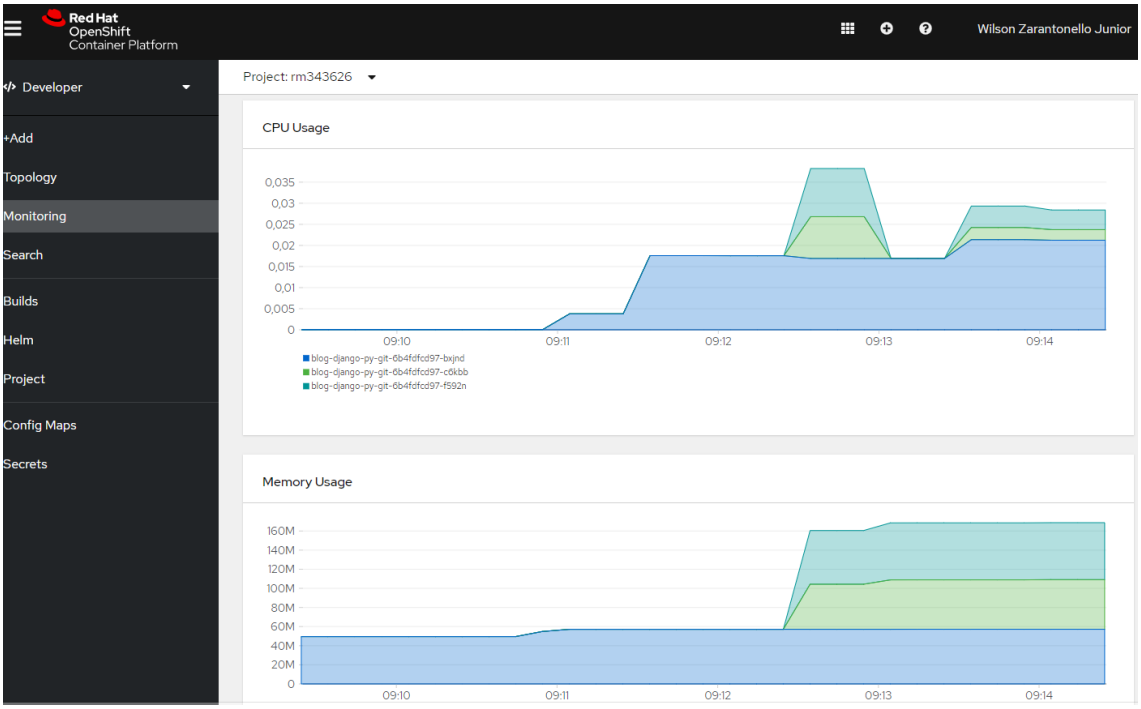
C: > Users > wilso > Downloads > openshift-client-windows > {} stress-test.json

```
1   import http from 'k6/http';
2   import {check, sleep} from 'k6';
3
4   export default function() {
5     let res = http.post('http://blog-django-py-git-rm343626.apps.na46a.prod.ole.redhat.com');
6       check(res, { 'success login': (r) => r.status === 200 });
7       sleep(0.3);
8   }
9
```

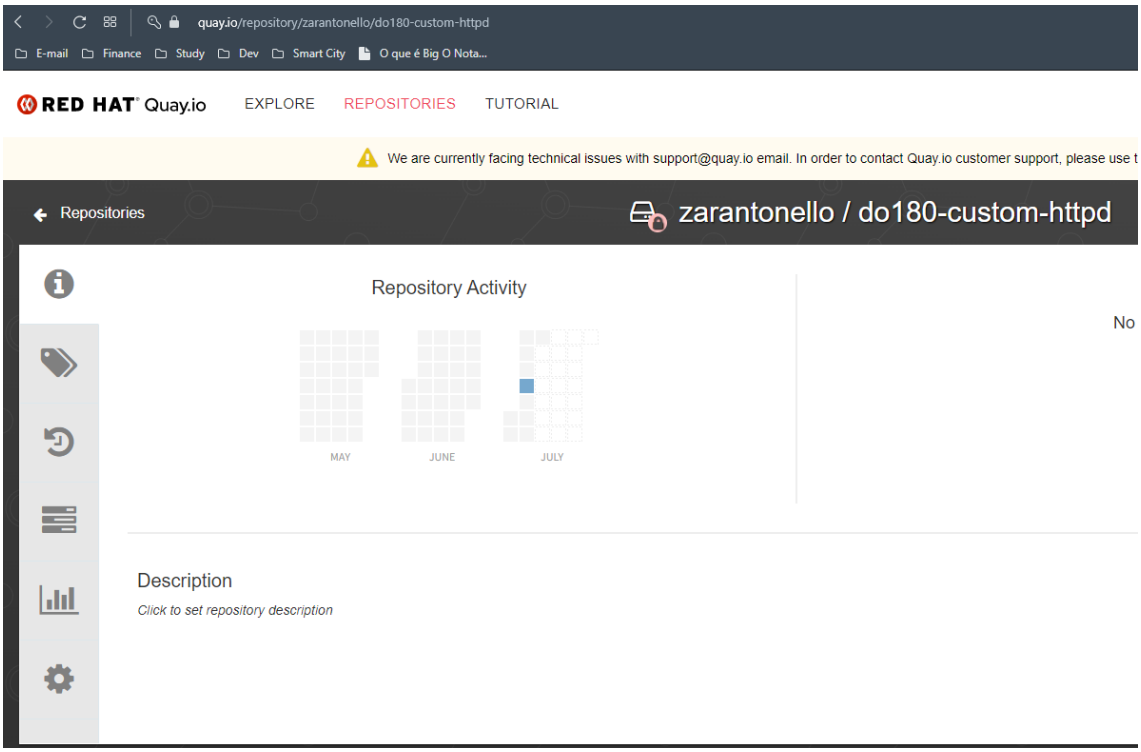
```
C:\Users\wilso\Downloads\openshift-client-windows>k6 run --vus 10000 --iterations 10000 stress-test.json

          /\      |‾‾| /‾‾/   /‾‾/
     /\  /  \     |  |/  /   /  /
    /  \/    \    |     (   /   ‾‾\
   /          \   |  |\  \ |  (‾)  |
  / __________ \  |__| \__\ \_____/ .io

  execution: local
     script: stress-test.json
     output: -

  scenarios: (100.00%) 1 scenario, 10000 max VUs, 10m30s max duration (incl. graceful stop):
           * default: 10000 iterations shared among 10000 VUs (maxDuration: 10m0s, gracefulStop: 30s)


running (00m04.9s), 09998/10000 VUs, 2 complete and 0 interrupted iterations
default   [--------------------------------------] 10000 VUs  00m04.9s/10m0s  00002/10000 shared iters
```

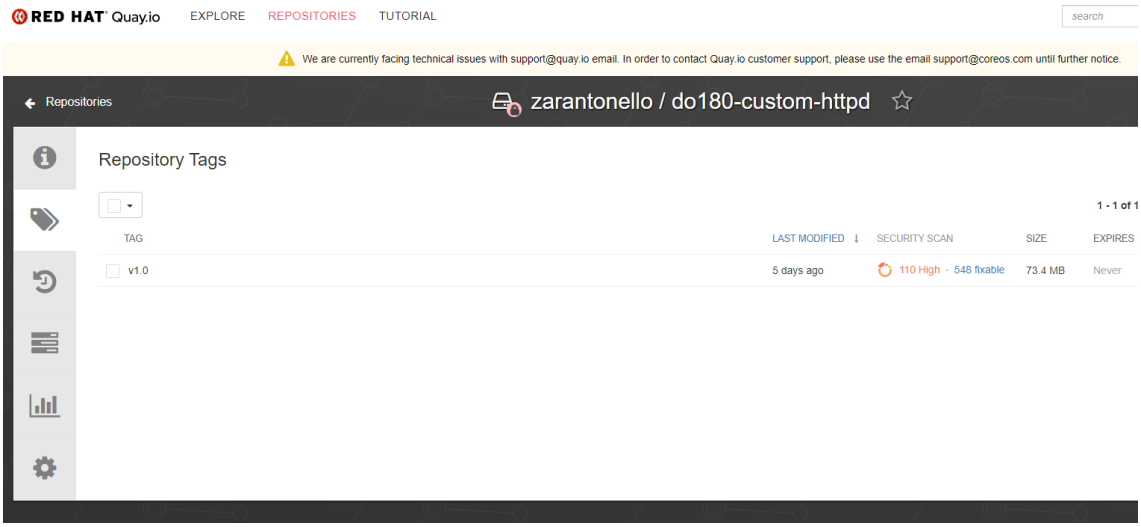
```
C:\Users\wilso\Downloads\openshift-client-windows>oc get pods
NAME                                READY   STATUS      RESTARTS   AGE
blog-django-py-git-1-build          0/1     Completed   0          3d20h
blog-django-py-git-6b4fdfcd97-bxjnd 1/1     Running     0          3d20h
blog-django-py-git-6b4fdfcd97-c6kbb 1/1     Running     0          24s
blog-django-py-git-6b4fdfcd97-f592n 1/1     Running     0          24s
postgresql-1-vcx7g                  1/1     Running     0          4d18h
sample-database-1-2pgtf             1/1     Running     0          3d20h
sample-database-1-deploy            0/1     Completed   0          3d20h
```

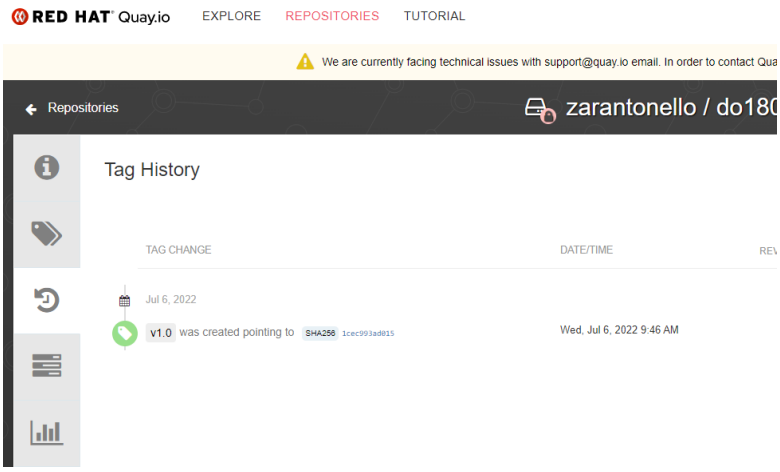



Red Hat
OpenShift
Container Platform
Wilson Zarantonello Junior
Developer
+Add
Topology
Monitoring
Search
Builds
Helm
Project
Config Maps
Secrets
Project: rm343626
CPU Usage
0,035
0,03
0,025
0,02
0,015
0,01
0,005
0
09:10
09:11
09:12
09:13
09:14
blog-django-py-git-6b4fdfcd97-bxjnd
blog-django-py-git-6b4fdfcd97-c6kbb
blog-django-py-git-6b4fdfcd97-f592n
Memory Usage
160M
140M
120M
100M
80M
60M
40M
20M
0
09:10
09:11
09:12
09:13
09:14

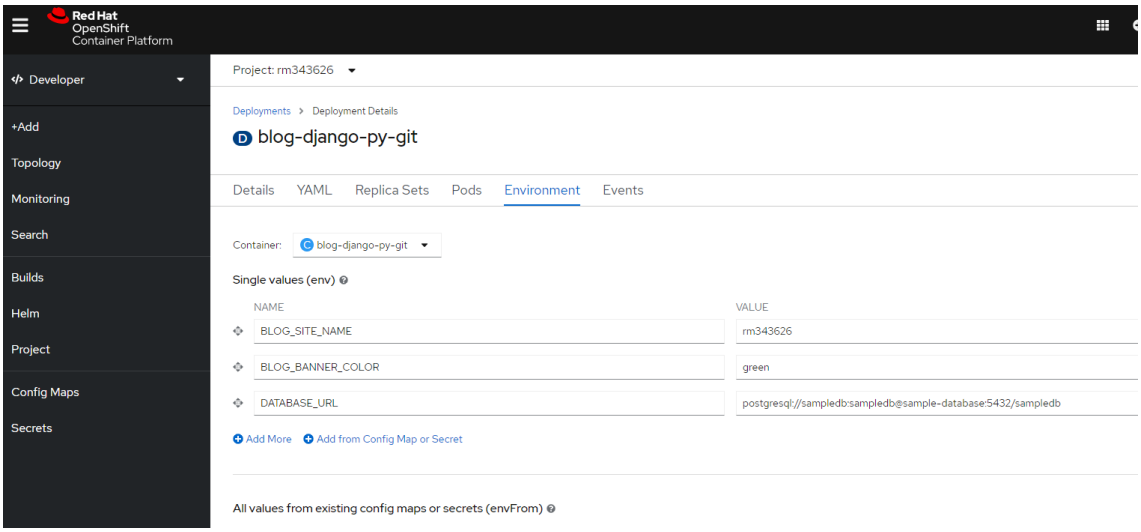
7. Publicação da imagem customizada no Quayo.io



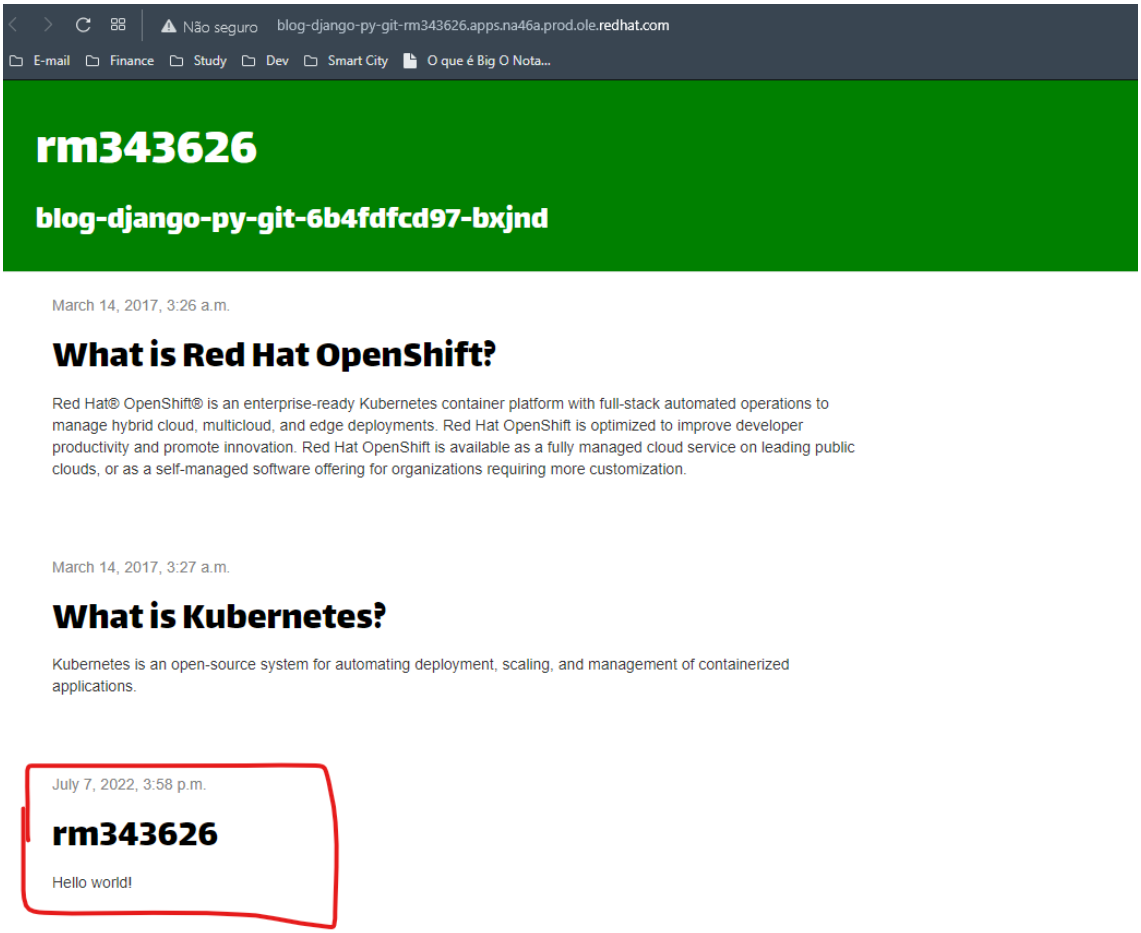




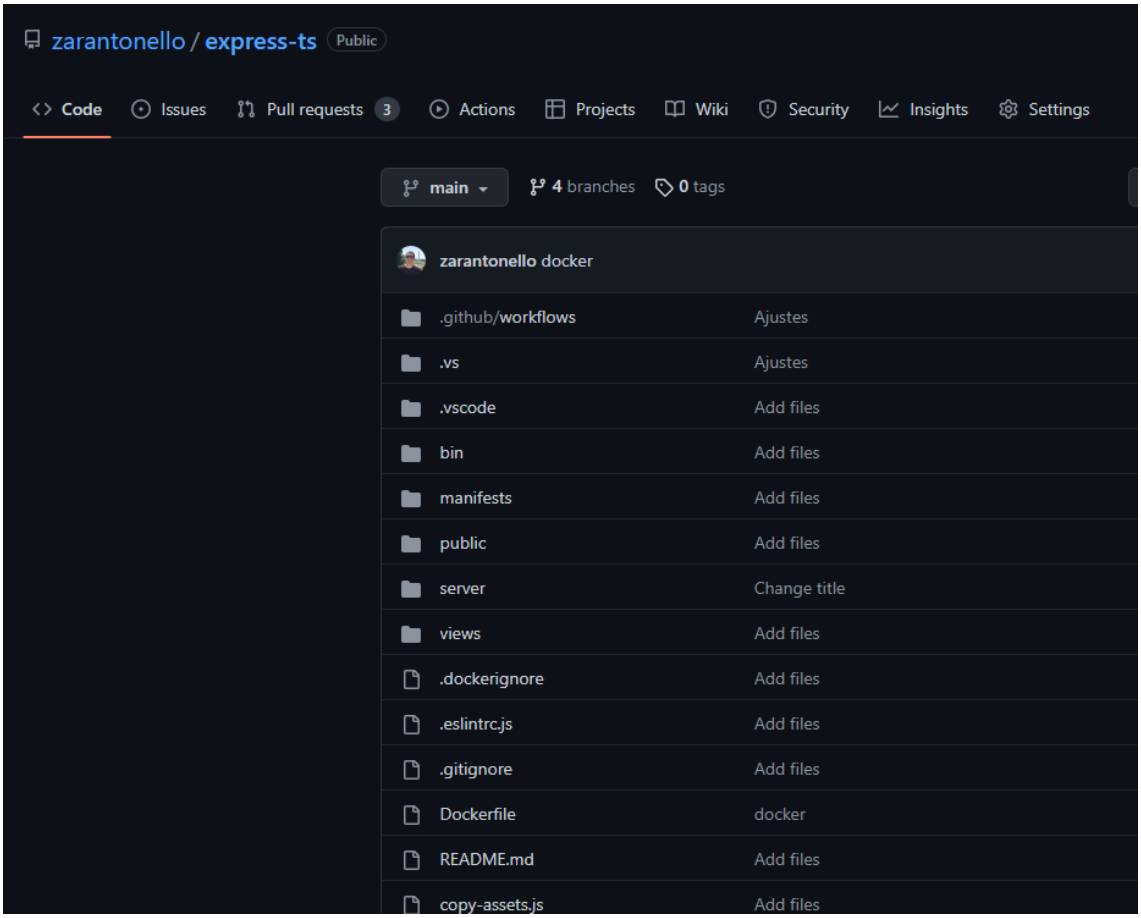
8. Customização do blog (nome e cor do site) através das variáveis de ambiente



9. Postagem no blog com conectividade com o banco de dados (http://blog-django-py-git-rm343626.apps.na46a.prod.ole.redhat.com)



10. Publicação do Projeto express-ts (Github)



11. Deploy do projeto no Openshift