

Para la ejecución he elegido poner la configuración en uno único fichero pero abajo lo detallo cada parte del fichero `drupal_postgresql-single_file.yml`:

- Definición de las configuraciones:

- Create StorageClass:

```
kind: StorageClass
apiVersion: storage.k8s.io/v1
metadata:
  name: local-storage
provisioner: kubernetes.io/no-provisioner
allowVolumeExpansion: true
mountOptions:
- debug
volumeBindingMode: Immediate
```

- Create PersistentVolume:

```
---
apiVersion: v1
kind: PersistentVolume
metadata:
  name: drupal-pv
  labels:
    type: local
spec:
  capacity:
    storage: 8Gi
  accessModes:
  - ReadWriteOnce
  persistentVolumeReclaimPolicy: Retain
  storageClassName: local-storage
  hostPath:
    path: /tmp/hostpath-provisioner
---
apiVersion: v1
kind: PersistentVolume
metadata:
  name: postgre-pv
  labels:
    type: local
spec:
  capacity:
    storage: 8Gi
  accessModes:
  - ReadWriteOnce
  persistentVolumeReclaimPolicy: Retain
  storageClassName: local-storage
  hostPath:
    path: /tmp/hostpath-provisioner
```

- Create PersistentVolumeClaim:

```
---
kind: PersistentVolumeClaim
apiVersion: v1
metadata:
  name: drupal-pvc
  labels:
    app: pratica4
spec:
  accessModes:
    - ReadWriteOnce
  storageClassName: local-storage
  resources:
    requests:
      storage: 2Gi
---
kind: PersistentVolumeClaim
apiVersion: v1
metadata:
  name: postgresql-pvc
  labels:
    app: pratica4
spec:
  accessModes:
    - ReadWriteOnce
  storageClassName: local-storage
  resources:
    requests:
      storage: 8Gi
```

- Create ClusterIP para PostgreSQL:

```
---
apiVersion: v1
kind: Service
metadata:
  name: postgresql-ci
  labels:
    app: pratica4
spec:
  ports:
    - port: 5432
  selector:
    app: pratica4
    tier: DB
```

- Create NodePort para Drupal:

```
---
apiVersion: v1
kind: Service
metadata:
  name: drupal-service-np
  labels:
    app: pratica4
spec:
  type: NodePort
  ports:
    - port: 80
      nodePort: 30080
  selector:
    app: pratica4
    tier: FE
```

- Create Secrets para PostgreSQL:

```
---
apiVersion: v1
kind: Secret
metadata:
  name: postgre-secret
  labels:
    app: pratica4
type: Opaque
data:
  db_user: ZHJ1cGFs
  db_pwd: ZHJ1cGFs
#drupal
#drupal
```

- Deploy PostgreSQL:

```
---
apiVersion: apps/v1
kind: Deployment
metadata:
  name: drupal-postgre
  labels:
    app: pratica4
spec:
  selector:
    matchLabels:
      app: pratica4
  replicas: 1
  template:
    metadata:
      labels:
        app: pratica4
        tier: DB
    spec:
      containers:
        - image: postgres:latest
```

```

name: postgresql
env:
  - name: POSTGRES_USER
    valueFrom:
      secretKeyRef:
        name: postgre-secret
        key: db_user
  - name: POSTGRES_DB
    value: drupal
  - name: POSTGRES_PASSWORD
    valueFrom:
      secretKeyRef:
        name: postgre-secret
        key: db_pwd
ports:
  - containerPort: 5432
name: postgresql
volumeMounts:
  - name: postgre-ps
    mountPath: /var/lib/postgresql/data
volumes:
  - name: postgre-ps
    persistentVolumeClaim:
      claimName: postgresql-pvc

```

- Deploy Drupal:

```

---
apiVersion: apps/v1
kind: Deployment
metadata:
  name: drupal
  labels:
    app: pratica4
spec:
  replicas: 3
  selector:
    matchLabels:
      app: pratica4
  template:
    metadata:
      labels:
        app: pratica4
    tier: FE
    spec:
      containers:
        - image: drupal:latest
          name: drupal
          ports:
            - containerPort: 30080
          name: drupal
          volumeMounts:
            - name: drupal-ps
              mountPath: /var/www/html/modules
              subPath: modules
            - name: drupal-ps
              mountPath: /var/www/html/profiles
              subPath: profiles

```

```
- name: drupal-ps
mountPath: /var/www/html/themes
subPath: themes
volumes:
- name: drupal-ps
persistentVolumeClaim:
claimName: drupal-pvc
```

- Comandos ejecutados:

```
$ minikube start --memory 8192 --cpus 2 --vm-driver=virtualbox
```

```
MacBook-Pro:~ lpache$ kubectl get nodes
NAME          STATUS    ROLES          AGE      VERSION
minikube      Ready     control-plane, 2m37s    v1.23.3
master
```

```
$ minikube mount /Users/lpache/mnt:/var/mnt --msize=18874368
```

```
$ kubectl apply -f drupal_postgresql-single_file.yml
```

```
MacBook-Pro:pratica_4 lpache$ kubectl apply -f drupal_postgresql-single_file.yml
storageclass.storage.k8s.io/local-storage created
persistentvolume/drupal-pv created
persistentvolume/postgre-pv created
persistentvolumeclaim/drupal-pvc created
persistentvolumeclaim/postgresql-pvc created
service/postgresql-ci created
secret/postgre-secret created
deployment.apps/drupal-postgre created
service/drupal-service-np created
deployment.apps/drupal created
```

```
$ kubectl get all -o wide
```

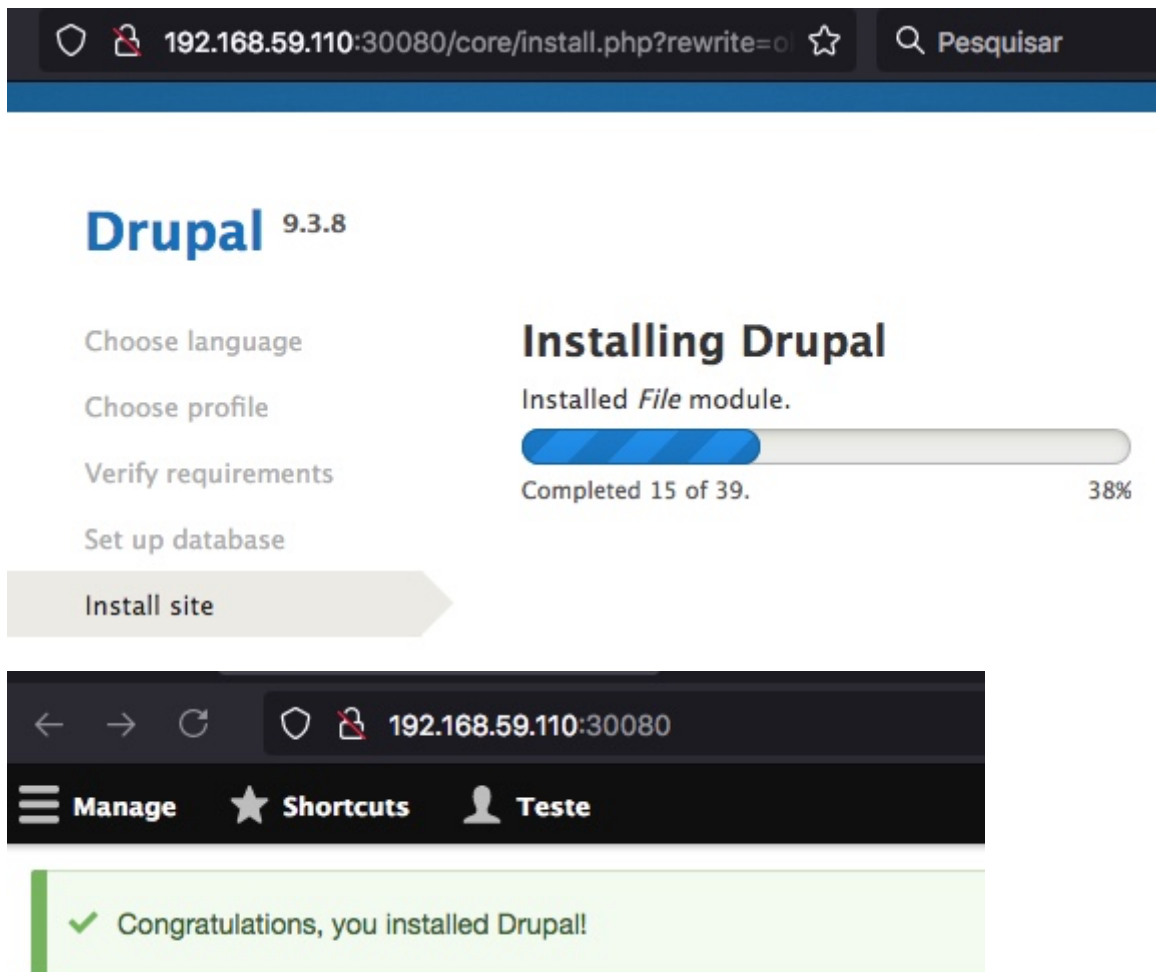
```
MacBook-Pro:pratica_4 lpache$ kubectl get all -o wide
NAME                                READY   STATUS    RESTARTS   AGE   IP            NODE
pod/drupal-9d54d6cc8-fn5b7         1/1     Running   0           2m7s  172.17.0.8    minikube
pod/drupal-9d54d6cc8-nfccm         1/1     Running   0           2m8s  172.17.0.7    minikube
pod/drupal-9d54d6cc8-wrftj         1/1     Running   0           17m   172.17.0.5    minikube
pod/drupal-postgre-786d8f9656-lnhj6 1/1     Running   0           17m   172.17.0.6    minikube

NAME                                TYPE          CLUSTER-IP    EXTERNAL-IP   PORT(S)          AGE   SELEC
service/drupal-service-np          NodePort      10.104.171.221 <none>         80:30080/TCP    17m   app=p
service/kubernetes                  ClusterIP     10.96.0.1      <none>         443/TCP          22m   <none
service/postgresql-ci              ClusterIP     10.101.245.27  <none>         5432/TCP         16m   app=p

NAME                                READY   UP-TO-DATE   AVAILABLE   AGE   CONTAINERS   IMAGES
deployment.apps/drupal              3/3     3             3           17m   drupal        drupal:lates
deployment.apps/drupal-postgre      1/1     1             1           17m   postgresql    postgres:lat

NAME                                DESIRED   CURRENT   READY   AGE   CONTAINERS   IMAGES
replicaset.apps/drupal-9d54d6cc8    3         3         3       17m   drupal        drupal
replicaset.apps/drupal-postgre-786d8f9656 1         1         1       17m   postgresql    postgr
```

- Capturas del resultado de la ejecución:



Welcome to Contenedores Actividad 4

```
[MacBook-Pro:pratica_4 lpache$ kubectl get sc
NAME                PROVISIONER                RECLAIMPOLICY    VOLUMEBINDINGMODE    ALLOWVOLUMEEXPANSION
local-storage        kubernetes.io/no-provisioner Delete            Immediate            true
standard (default)   k8s.io/minikube-hostpath   Delete            Immediate            false
```

```
[MacBook-Pro:pratica_4 lpache$ kubectl get pv
NAME                CAPACITY    ACCESS MODES    RECLAIM POLICY    STATUS    CLAIM
drupal-pv           8Gi         RWO             Retain            Bound     default/drupal-pvc
postgres-pv         8Gi         RWO             Retain            Bound     default/postgresql-pvc
[MacBook-Pro:pratica_4 lpache$ kubectl get pvc
NAME                STATUS    VOLUME          CAPACITY    ACCESS MODES    STORAGECLASS    AGE
drupal-pvc          Bound     drupal-pv       8Gi         RWO             local-storage   18m
postgresql-pvc      Bound     postgres-pv     8Gi         RWO             local-storage   18m
```

```
[MacBook-Pro:pratica_4 lpache$ kubectl get services
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
drupal-service-np   NodePort    10.104.171.221 <none>         80:30080/TCP     19m
kubernetes           ClusterIP   10.96.0.1      <none>         443/TCP          24m
postgresql-ci       ClusterIP   10.101.245.27 <none>         5432/TCP         19m
```