

```
kirillspitsyn@LAPTOP-VPGTN0GN: ~/docker-ethereum
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$ kubectl apply -f dapp-service.yaml,ganache-service.yaml,react-service.y
aml,dapp-deployment.yaml,ganache-deployment.yaml,react-deployment.yaml,hpa-dapp.yaml,hpa-react.yaml
service/dapp configured
service/ganache configured
service/react configured
deployment.apps/dapp created
deployment.apps/ganache created
deployment.apps/react created
horizontalpodautoscaler.autoscaling/hpa-dapp created

kirillspitsyn@LAPTOP-VPGTN0GN: ~/docker-ethereum
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
dapp-65969586b9-4m9sc               1/1     Running   0           46s
dapp-65969586b9-x49jn               1/1     Running   0           46s
dapp-65969586b9-zlrmd               1/1     Running   0           46s
ganache-645dcf46c4-hvt2c            1/1     Running   0           46s
ganache-645dcf46c4-j8wsc            1/1     Running   0           46s
ganache-645dcf46c4-wdlwc            1/1     Running   0           46s
react-858ccdb68d-7pj7b              1/1     Running   0           46s
react-858ccdb68d-bs8bj              1/1     Running   0           46s
react-858ccdb68d-mjpxw              1/1     Running   0           46s
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$ kubectl get svc
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
dapp                                LoadBalancer        10.97.250.114   <pending>     4000:30970/TCP   7h52m
ganache                             LoadBalancer        10.100.232.54   <pending>     8545:31942/TCP   7h52m
react                               LoadBalancer        10.110.149.183  <pending>     3000:30436/TCP   7h52m
```

Docker Ethereum App running in the browser

← → ↻

localhost:3000

set message

Set Message
Get Message
Compile Contract
Deploy Contract

set message

Set Message
Get Message
Compile Contract
Deploy Contract

Contract compiled successfully!

set message

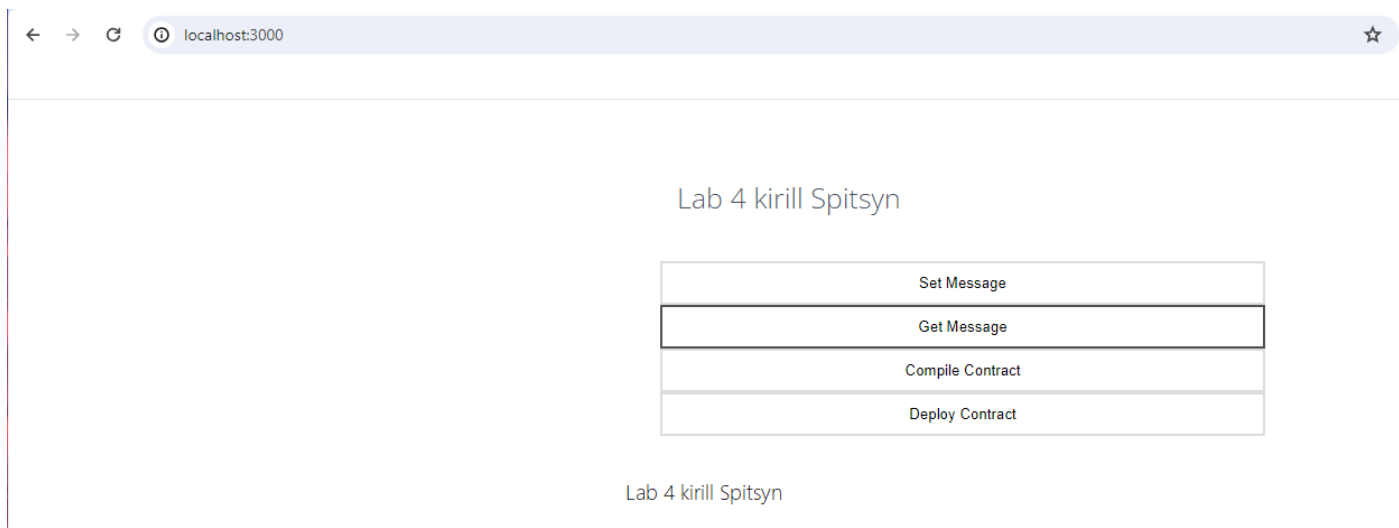
Set Message
Get Message
Compile Contract
Deploy Contract

0x6F958D836120df435B00a49847B96b9b844ef20e

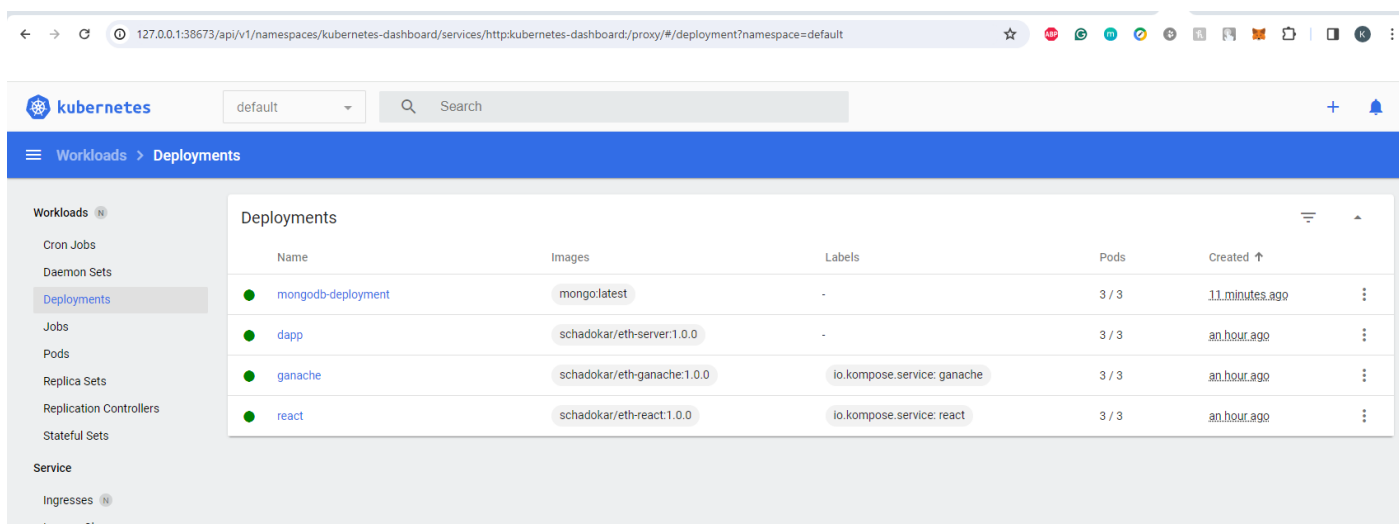
Lab 4 kirill Spitsyn

Set Message
Get Message
Compile Contract
Deploy Contract

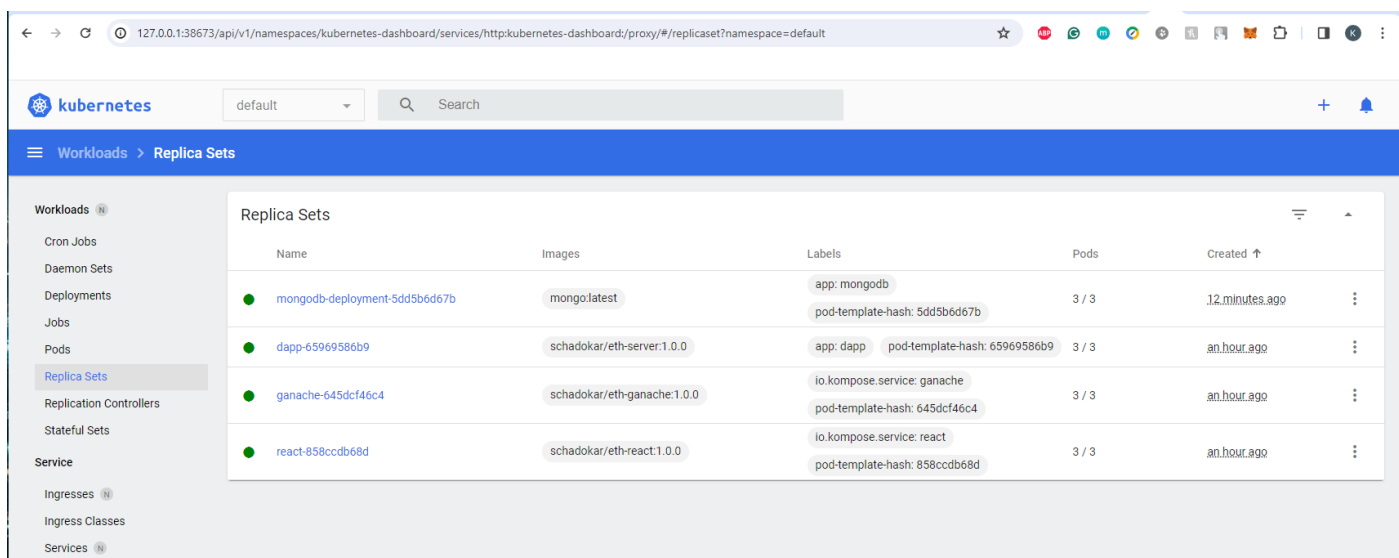
0x69637a7c7575e4649b5a119e3b08ebe99be8b566cda6417b396b153rq



Minikube dashboard



Deployment ReplicaSets and StatefulSets. StatefulSets used for mongodb, replicaSets used for the whole application



127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/statefulset?namespace=default

kubernetes default Search

Workloads > Stateful Sets

Workloads (8)

- Cron Jobs
- Daemon Sets
- Deployments

Stateful Sets

Name	Images	Labels	Pods	Created ↑
mongodb-statefulset	mongo:latest	-	3 / 3	23 minutes ago

```
kirillspitsyn@LAPTOP-VPGTN0GN: ~/docker-ethereum
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$ kubectl get replicaset
NAME                                DESIRED  CURRENT  READY  AGE
dapp-65969586b9                     3         3        3      112m
ganache-645dcf46c4                  3         3        3      112m
mongodb-deployment-5dd5b6d67b        3         3        3      14m
react-858ccdb68d                     3         3        3      112m
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$ kubectl get statefulsets
NAME                                READY    AGE
mongodb-statefulset                 3/3      24m
```

Storage. Persistent volume claims and persistent volumes used for StatefulSet storage

127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/persistentvolumeclaim?namespace=default

kubernetes default Search

Config And Storage > Persistent Volume Claims

Workloads (8)

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers
- Stateful Sets
- Service

Persistent Volume Claims

Name	Labels	Status	Volume	Capacity	Access Modes	Storage Class	Created ↑
mongodb-pvc	-	Bound	mongodb-pv	1Gi	ReadWriteOnce	standard	14 minutes ago
mongodb-storage-mongodb-statefulset-2	app: mongodb	Bound	pvc-7c873c89-c9e1-4fc3-ba05-d6f56cbb26dc	1Gi	ReadWriteOnce	standard	24 minutes ago
mongodb-storage-mongodb-statefulset-1	app: mongodb	Bound	pvc-87a46b0a-395c-4da7-a05c-3133b6d7791c	1Gi	ReadWriteOnce	standard	24 minutes ago
mongodb-data	-	Bound	pvc-ae5de53e-b3e5-455c-8f0d-56470664084d	1Gi	ReadWriteOnce	standard	24 minutes ago
mongodb-storage-mongodb-statefulset-0	app: mongodb	Bound	pvc-1153e30e-c6bf-4331-89fd-138dee429ebd	1Gi	ReadWriteOnce	standard	25 minutes ago

127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/persistentvolume?namespace=default

kubernetes default Search

Cluster > Persistent Volumes

Workloads (8)

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers
- Stateful Sets
- Service
- Ingresses (1)
- Ingress Classes
- Services (8)

Config And Storage

- Config Maps (1)
- Persistent Volume Claims (4)
- Secrets (1)
- Storage Classes

Cluster

- Cluster Role Bindings
- Cluster Roles
- Events (1)
- Namespaces
- Network Policies (1)
- Nodes
- Persistent Volumes
- Role Bindings (1)

Persistent Volumes

Name	Capacity	Access Modes	Reclaim Policy	Status	Claim	Storage Class	Reason	Created ↑
mongodb-pv	storage: 1Gi	ReadWriteOnce	Retain	Bound	default/mongodb-pvc	standard	-	22 minutes ago
pvc-7c873c89-c9e1-4fc3-ba05-d6f56cbb26dc	storage: 1Gi	ReadWriteOnce	Delete	Bound	default/mongodb-storage-mongodb-statefulset-2	standard	-	32 minutes ago
pvc-87a46b0a-395c-4da7-a05c-3133b6d7791c	storage: 1Gi	ReadWriteOnce	Delete	Bound	default/mongodb-storage-mongodb-statefulset-1	standard	-	32 minutes ago
pvc-ae5de53e-b3e5-455c-8f0d-56470664084d	storage: 1Gi	ReadWriteOnce	Delete	Bound	default/mongodb-data	standard	-	32 minutes ago
pvc-1153e30e-c6bf-4331-89fd-138dee429ebd	storage: 1Gi	ReadWriteOnce	Delete	Bound	default/mongodb-storage-mongodb-statefulset-0	standard	-	33 minutes ago

Scaling. Horizontal Pod Autoscaler (HPA)

```
kirillspitsyn@LAPTOP-VPGTN0GN: ~/docker-ethereum
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$ kubectl get hpa
NAME          REFERENCE          TARGETS          MINPODS  MAXPODS  REPLICAS  AGE
hpa-dapp      Deployment/dapp     <unknown>/50%    1        15       3          116m
hpa-react     Deployment/react    <unknown>/50%    1        15       3          116m
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$
```

Load Balancer

127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/service?namespace=default

kubernetes default Search

Service > Services

Workloads (8)

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses (8)
- Ingress Classes
- Services (8)

Name	Labels	Type	Cluster IP	Internal Endpoints	External Endpoints	Created ↑
mongodb-service	-	ClusterIP	None	mongodb-service:27017 TCP mongodb-service:0 TCP	-	26 minutes ago
dapp	io.kompose.service: dapp	LoadBalancer	10.97.250.114	dapp:4000 TCP dapp:30970 TCP	-	9 hours ago
ganache	io.kompose.service: ganache	LoadBalancer	10.100.232.54	ganache:8545 TCP ganache:31942 TCP	-	9 hours ago
react	io.kompose.service: react	LoadBalancer	10.110.149.183	react:3000 TCP react:30436 TCP	-	9 hours ago
kubernetes	component: apiserver provider: kubernetes	ClusterIP	10.96.0.1	kubernetes:443 TCP kubernetes:0 TCP	-	2 days ago

```
kirillspitsyn@LAPTOP-VPGTN0GN: ~/docker-ethereum
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$ kubectl get svc
NAME          TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
dapp          LoadBalancer 10.97.250.114 <pending>      4000:30970/TCP   9h
ganache       LoadBalancer 10.100.232.54 <pending>      8545:31942/TCP   9h
kubernetes    ClusterIP     10.96.0.1     <none>         443/TCP          2d7h
mongodb-service ClusterIP     None          <none>         27017/TCP        27m
react         LoadBalancer 10.110.149.183 <pending>      3000:30436/TCP   9h
kirillspitsyn@LAPTOP-VPGTN0GN:~/docker-ethereum$
```

Secrets

127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard/proxy/#/secret?namespace=default

kubernetes default Search

Config And Storage > Secrets

Workloads (8)

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers
- Stateful Sets

Service

- Ingresses (8)
- Ingress Classes
- Services (8)

Config and Storage

- Config Maps (8)
- Persistent Volume Claims (8)
- Secrets (8)
- Storage Classes

Name	Labels	Type	Created ↑
dapp-secret	-	Opaque	16 minutes ago
mongodb-secret	-	Opaque	30 minutes ago

127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/secret/default/dapp-secret?namespace=default

kubernetes

default

Search

Config And Storage

Secrets

dapp-secret

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Metadata

Name	Namespace	Created	Age	UID
dapp-secret	default	Feb 9, 2024	17 minutes ago	c14d028b-378e-456b-9fa6-ea0acc589167

Annotations

kubectl.kubernetes.io/last-applied-configuration

Data

app_password 19 bytes

app_username 11 bytes

127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/secret/default/mongodb-secret?namespace=default

kubernetes

default

Search

Config And Storage

Secrets

mongodb-secret

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Metadata

Name	Namespace	Created	Age	UID
mongodb-secret	default	Feb 9, 2024	32 minutes ago	92146351-5a60-4338-bd5a-44e67aafd5ca

Annotations

kubectl.kubernetes.io/last-applied-configuration

Data

password 8 bytes

username 7 bytes

Role-Based Access Control (RBAC), Roles, and Role Binding

Kubernetes

default

Search

Cluster > Role Bindings > dapp-role-binding

+ 🔔

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses ⓘ

Ingress Classes

Services ⓘ

Config and Storage

Config Maps ⓘ

Persistent Volume Claims ⓘ

Secrets ⓘ

Storage Classes

Cluster

Cluster Role Bindings

Cluster Roles

Events ⓘ

Namespaces

Network Policies ⓘ

Nodes

Persistent Volumes

Role Bindings ⓘ

Roles ⓘ

Metadata

Name	Namespace	Created	Age	UID
dapp-role-binding	default	Feb 9, 2024	23 minutes ago	2cd03b16-8ee9-47ef-b5a7-674fab4b3d3d

Annotations
kubectrl.kubernetes.io/last-applied-configuration

Resource information

Role Reference

user-role

Subjects

Name	Namespace	Kind	API Group
dapp-service-account	-	ServiceAccount	

← → ↺ 🔍 127.0.0.1:38673/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/role/default/user-role?namespace=default ☆ 📄 🌐 🔄 🏠 🗑️ 🚪 ⌨️

kubernetes

default ▾ 🔍 Search

+ 🔔

Cluster > Roles > user-role ✎ 🗑️

Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses ⓘ
Ingress Classes
Services ⓘ
Config and Storage
Config Maps ⓘ
Persistent Volume Claims ⓘ
Secrets ⓘ
Storage Classes
Cluster
Cluster Role Bindings
Cluster Roles
Events ⓘ
Namespaces
Network Policies ⓘ
Nodes
Persistent Volumes
Role Bindings ⓘ
Roles ⓘ
Service Accounts ⓘ

Metadata

Name	Namespace	Created	Age	UID
user-role	default	Feb 9, 2024	24 minutes ago	efa2a8a8-3c14-4ce0-a1b0-14f811900523

Annotations

kubectrl.kubernetes.io/last-applied-configuration

Rules

Resources	Non-resource URL	Resource Names	Verbs	API Groups
pods	-	-	get, list, watch	