

Kubernetes-Namespaces, DeploymentsFile

1.Setting up the index.html

```
C:\Windows\System32\cmd.e  X + v
Microsoft Windows [Version 10.0.26100.2605]
(c) Microsoft Corporation. All rights reserved.

F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>vim index.html

F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>cat index.html
'cat' is not recognized as an internal or external command,
operable program or batch file.

F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>type index.html && type
CON
<!DOCTYPE html>
<html>
    <head>
        <title> My info </title>
    </head>
    <body>
        <h1>Name: Beqir</h1>
        <h1>Surname: Fazli</h1>
        <h1>Index: 191045</h1>
    </body>
</html>
|
```

2.Setting up Dockerfile

```
F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>vim Dockerfile

F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>type Dockerfile && type
CON
FROM nginx:alpine
COPY index.html /usr/share/nginx/html/index.html
|
```

3. Build command

```
C:\Windows\System32\cmd.e  X  +  v  -  □  X

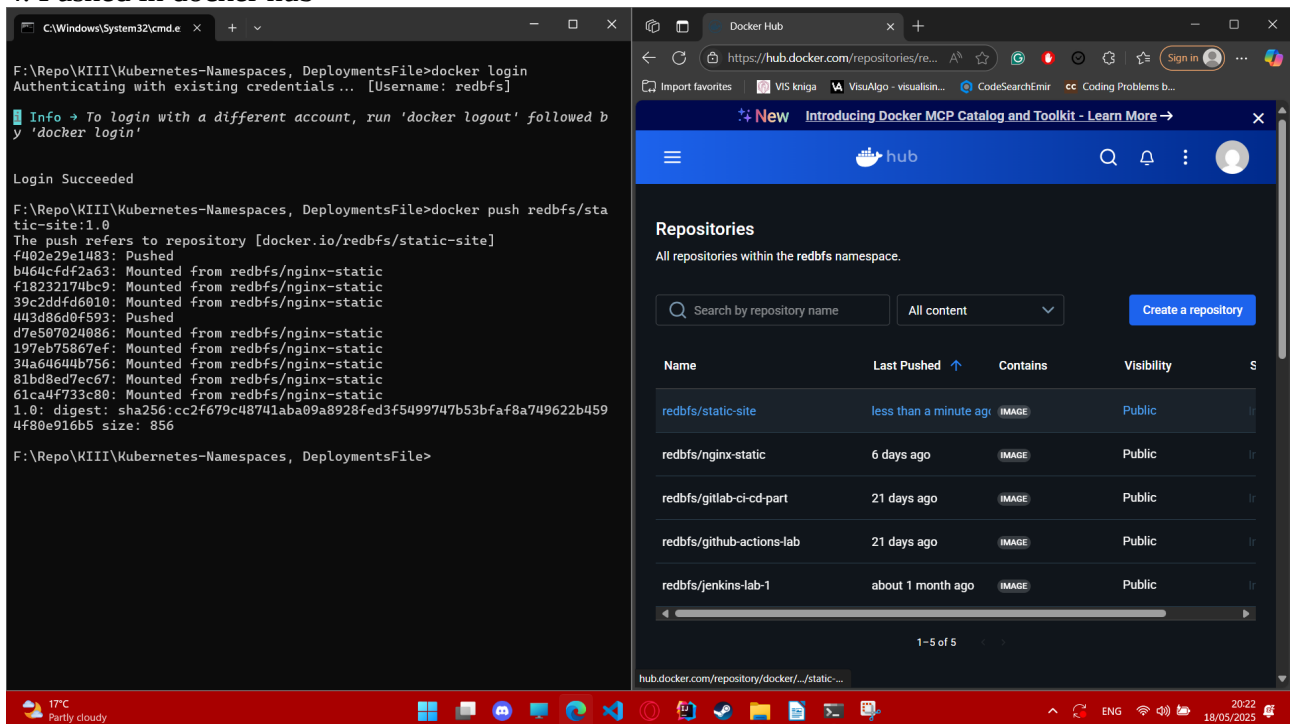
F:\Repo\KIII\Kubernetes-Namespace, DeploymentsFile>docker build -t redbfs
/static-site:1.0 .
[+] Building 3.5s (8/8) FINISHED                                docker:desktop-linux
=> [internal] load build definition from Dockerfile              0.1s
=> => transferring dockerfile: 106B                             0.0s
=> [internal] load metadata for docker.io/library/nginx:alpine  1.8s
=> [auth] library/nginx:pull token for registry-1.docker.io    0.0s
=> [internal] load .dockerignore                                0.2s
=> => transferring context: 2B                                   0.0s
=> [internal] load build context                                0.1s
=> => transferring context: 216B                                0.0s
=> CACHED [1/2] FROM docker.io/library/nginx:alpine@sha256:65645c7 0.1s
=> => resolve docker.io/library/nginx:alpine@sha256:65645c7bb6a066 0.1s
=> [2/2] COPY index.html /usr/share/nginx/html/index.html      0.1s
=> exporting to image                                           0.7s
=> => exporting layers                                          0.3s
=> => exporting manifest sha256:b661c93e66763157869e90f7a2ed62b797 0.0s
=> => exporting config sha256:cbcf84fe8b48e979d764293b4709b2f6e62c 0.0s
=> => exporting attestation manifest sha256:21f009c2109a43dc19d6e5 0.1s
=> => exporting manifest list sha256:cc2f679c48741aba09a8928fed3f5 0.1s
=> => naming to docker.io/redbfs/static-site:1.0               0.0s
=> => unpacking to docker.io/redbfs/static-site:1.0            0.1s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/gz9wax9lzbc0hftmtbr2kjkdL

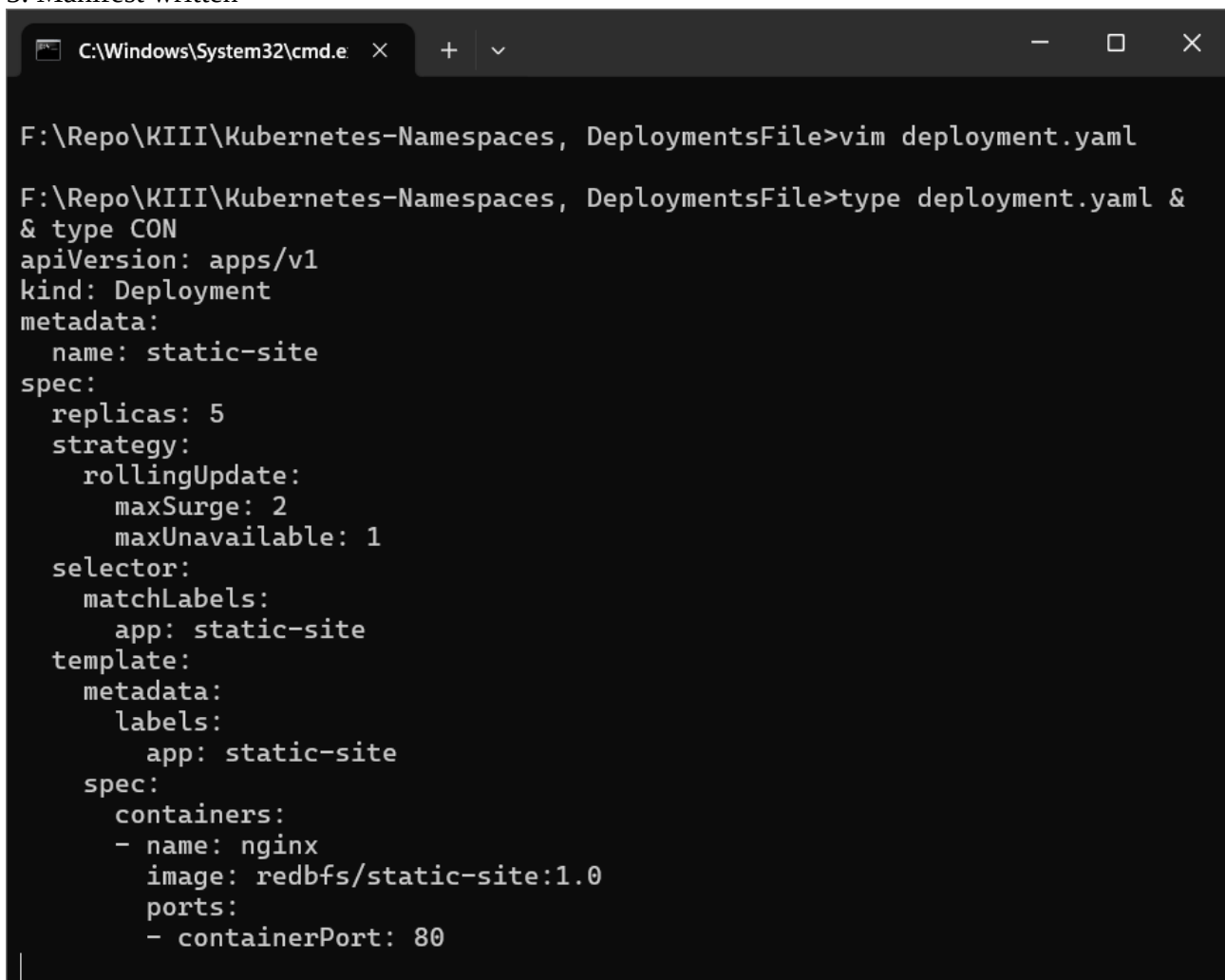
F:\Repo\KIII\Kubernetes-Namespace, DeploymentsFile>
```

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4. Pushed in docker hub



5. Manifest written



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6. Applied to the cluster

```
F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>kubectl apply -f deployment.yaml
error: error validating "deployment.yaml": error validating data: failed to download openapi: Get "http://localhost:8080/openapi/v2?timeout=32s": dial tcp [::1]:8080: connectex: No connection could be made because the target machine actively refused it.; if you choose to ignore these errors, turn validation off with --validate=false

F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>kubectl apply -f deployment.apps/static-site created

F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>kubectl get deployment
NAME                 READY    UP-TO-DATE    AVAILABLE    AGE
static-site          5/5      5              5             26s

F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>kubectl get pods
NAME                 READY    STATUS    RESTARTS    AGE
static-site-64d6bc45cd-fvghj    1/1      Running   0            32s
static-site-64d6bc45cd-nfqbw    1/1      Running   0            32s
static-site-64d6bc45cd-rbvm7    1/1      Running   0            32s
static-site-64d6bc45cd-tp8mt    1/1      Running   0            32s
static-site-64d6bc45cd-vvrv6    1/1      Running   0            32s

F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>
```

7. Added the year in html

The screenshot displays a Windows terminal window on the left and a Docker Hub web interface on the right.

Terminal Output:

```
F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>vim index.html
F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>type index.html && type CON
<html>
  <head>
    <title> My info </title>
  </head>
  <body>
    <h1>Name: Beqir</h1>
    <h1>Surname: Fazli</h1>
    <h1>Index: 191045</h1>
    <h1>Year: 2025</h1>
  </body>
</html>

F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>docker build -t redbfs/static-site:2.0 .
[*] Building 3.1s (8/8) FINISHED
  => [internal] load build definition from Dockerfile 0.1s
  => transferring dockerfile: 160B 0.0s
  => [internal] load metadata for docker.io/library/nginx:alpine 1.6s
  => [auth] library/nginx:pull token for registry-1.docker.io 0.0s
  => [internal] load dockerignore 0.0s
  => transferring context: 2B 0.0s
  => [internal] load build context 0.1s
  => transferring context: 239B 0.0s
  => CACHED [1/2] FROM docker.io/library/nginx:alpine@sha256:65845c7 0.1s
  => resolve docker.io/library/nginx:alpine@sha256:65845c7bb5a86 0.1s
  => [2/2] COPY index.html /usr/share/nginx/html/index.html 0.2s
  => exporting to image 0.7s
  => exporting layers 0.4s
  => exporting manifest sha256:8e2c81f00910 0.0s
  => exporting config sha256:3babc12bc214f4f6e31c3b4f38f6512af2e 0.0s
  => exporting attestation manifest sha256:d9860f09a90f2785b5eac3 0.1s
  => exporting manifest list sha256:ad7c76c4a3c3cfc4c85f3f4b5 0.0s
  => naming to docker.io/redbfs/static-site:2.0 0.0s
  => unpacking to docker.io/redbfs/static-site:2.0 0.1s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/12t2uj8i9iyajvnm9e95d69ae
F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>docker push redbfs/static-site:2.0
The push refers to repository [docker.io/redbfs/static-site]
61ca4f793c88: Layer already exists
b04c4fd2a63: Layer already exists
a571947ab189: Pushed
d7e50702086: Layer already exists
39c20d6d6018: Layer already exists
137a375867ef: Layer already exists
f1823217bcb9: Layer already exists
7077d6873145: Pushed
81b08e07ec07: Layer already exists
3a46464b756: Layer already exists
2.0: digest: sha256:ad7c76c4a3c3cfc4c85f3f4b5fe40b5ed1b0048cb274b095a51ddc71b84a1u1f size: 856

F:\Repo\KIIII\Kubernetes-Namespaces, DeploymentsFile>
```

Docker Hub Interface:

The Docker Hub interface shows the repository 'redbfs/static-site' with two tags: 2.0 and 1.0. The tag 2.0 is the latest, pushed less than a minute ago. The tag 1.0 was pushed 18 minutes ago. The interface also shows the digest, OS/ARCH (linux/amd64), last pull time (less than 1 day), and compressed size (19.99 MB) for each tag.

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8.Rollout new version

```
C:\Windows\System32\cmd.e x + v
F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>kubectl set image deployment/static-site nginx=redbfs/static-site:2.0
deployment.apps/static-site image updated
F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>kubectl rollout status deployment/static-site
deployment "static-site" successfully rolled out
F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>kubectl describe pod
Name:          static-site-7d778cd7b9-g8kms
Namespace:     default
Priority:       0
Service Account: default
Node:          docker-desktop/192.168.65.3
Start Time:    Sun, 18 May 2025 20:41:40 +0200
Labels:        app=static-site
               pod-template-hash=7d778cd7b9
Annotations:   <none>
Status:        Running
IP:            10.1.0.11
IPs:           IP: 10.1.0.11
Controlled By: ReplicaSet/static-site-7d778cd7b9
Containers:
  nginx:
    Container ID:  docker://30af2a83a9db1907f0f20bfa292e6002eb082b72c73d90eeb75b0cd02898e9a8
    Image:         redbfs/static-site:2.0
    Image ID:      docker-pullable://redbfs/static-site@sha256:ad7cc76c4a3c3cefdc485ffe3f0b5ed1b0048cb2748d95a51dddec71b84a4141f
    Port:          80/TCP
    Host Port:     80/TCP
    States:        Running
      Started:     Sun, 18 May 2025 20:41:41 +0200
    Ready:         True
    Restart Count: 0
    Environment:   <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-dwxhq (ro)
Conditions:
  Type                     Status
  PodReadyToStartContainers True
  Initialized              True
  Ready                    True
  ContainersReady          True
  PodScheduled             True
Volumes:
  kube-api-access-dwxhq:
    Type:              Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:      kube-root-ca.crt
    Optional:           false
    DownwardAPI:        true
QoS Class:             BestEffort
```

9.Reverting

```
C:\Windows\System32\cmd.e  ×  +  ▾  -  □  ×

F:\Repo\KIIII\Kubernetes-Namespace, DeploymentsFile>kubectl rollout undo deployment/static-
site
deployment.apps/static-site rolled back

F:\Repo\KIIII\Kubernetes-Namespace, DeploymentsFile>kubectl get rs
NAME                                DESIRED   CURRENT   READY   AGE
static-site-64d6bc45cd             5         5         5       11m
static-site-7d778cd7b9             0         0         0       4m17s

F:\Repo\KIIII\Kubernetes-Namespace, DeploymentsFile>kubectl rollout
Manage the rollout of one or many resources.

Valid resource types include:

* deployments
* daemonsets
* statefulsets

Examples:
# Rollback to the previous deployment
kubectl rollout undo deployment/abc

# Check the rollout status of a daemonset
kubectl rollout status daemonset/foo

# Restart a deployment
kubectl rollout restart deployment/abc

# Restart deployments with the 'app=nginx' label
kubectl rollout restart deployment --selector=app=nginx

Available Commands:
history      View rollout history
pause        Mark the provided resource as paused
restart      Restart a resource
resume       Resume a paused resource
status       Show the status of the rollout
undo         Undo a previous rollout

Usage:
  kubectl rollout SUBCOMMAND [options]

Use "kubectl rollout <command> --help" for more information about a given
command.
Use "kubectl options" for a list of global command-line options (applies to all
commands).

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```

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10.Final Results

The screenshot shows a Windows desktop environment. On the left, a terminal window is open with the following commands and output:

```
F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>kubectl expose deployment static-site -  
-type=NodePort --port=88  
service/static-site exposed  
  
F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>kubectl get svc  
NAME         TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE  
kubernetes   ClusterIP   10.96.0.1     <none>         443/TCP          15m  
static-site   NodePort    10.105.79.87  <none>         88:31279/TCP     13s  
  
F:\Repo\KIII\Kubernetes-Namespaces, DeploymentsFile>
```

On the right, a web browser window is open, displaying a form with the following text:

Name: Beqir
Surname: Fazli
Index: 191045

The browser's address bar shows the URL `localhost:31279`. The taskbar at the bottom of the screen shows the system clock as 20:49 on 18/05/2023, and the weather as 15°C Mostly cloudy.