

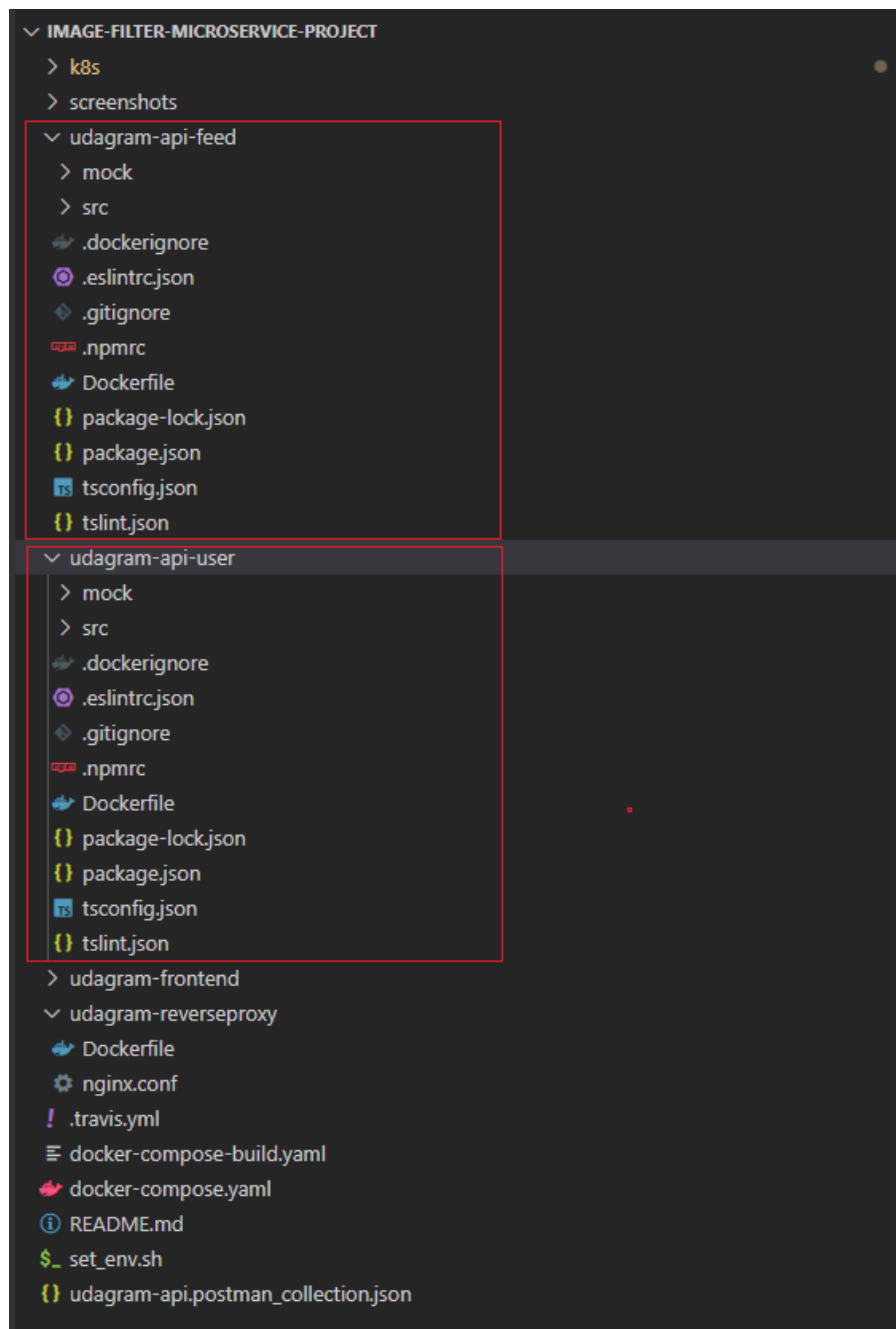
Git Repository

<https://github.com/igomezgithub/image-filter-microservice-project.git>

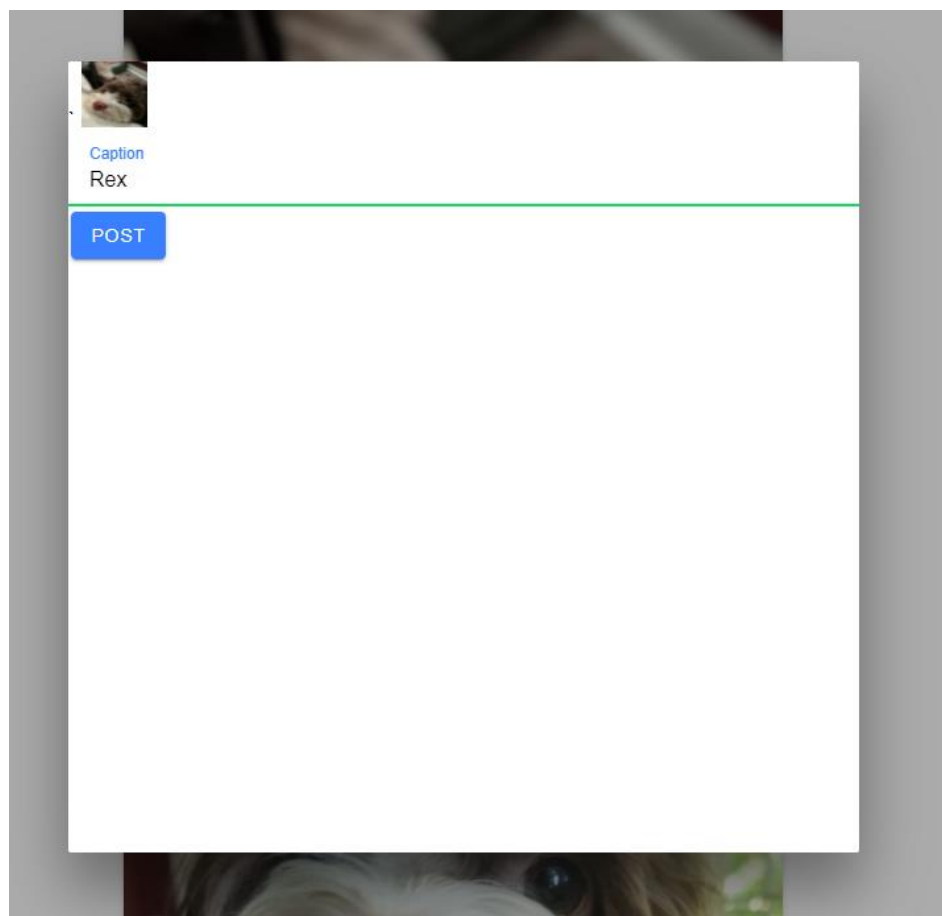
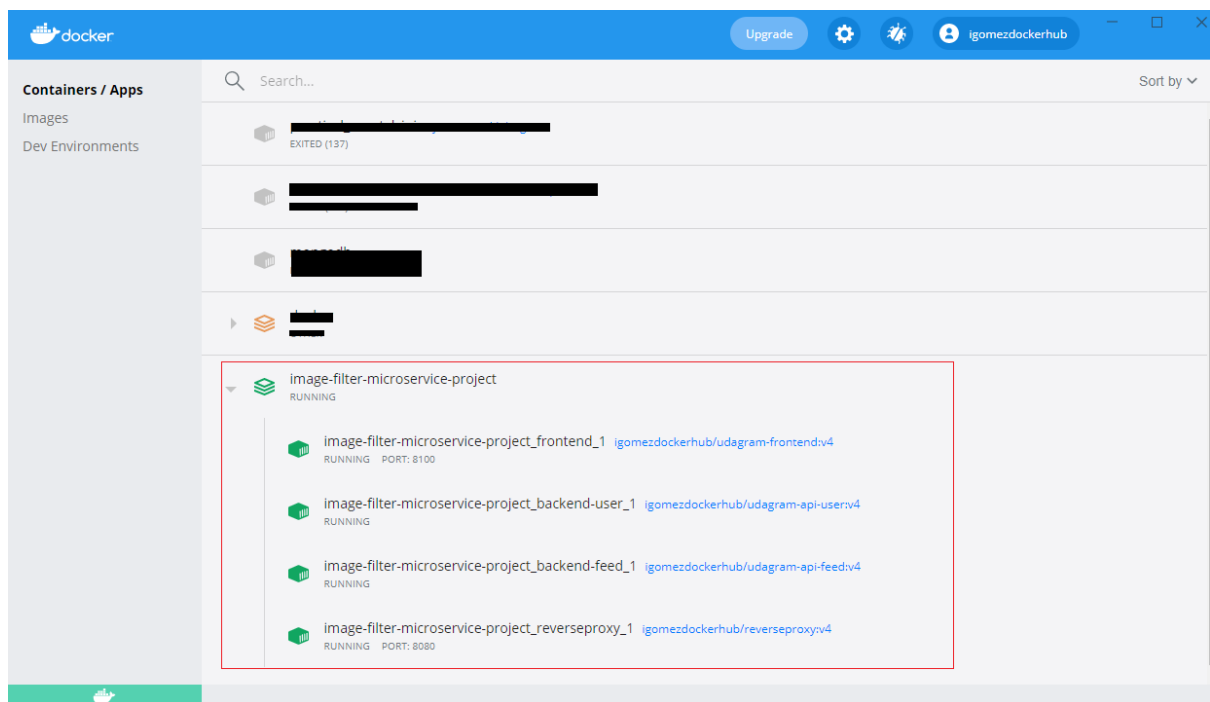
Project Rubric

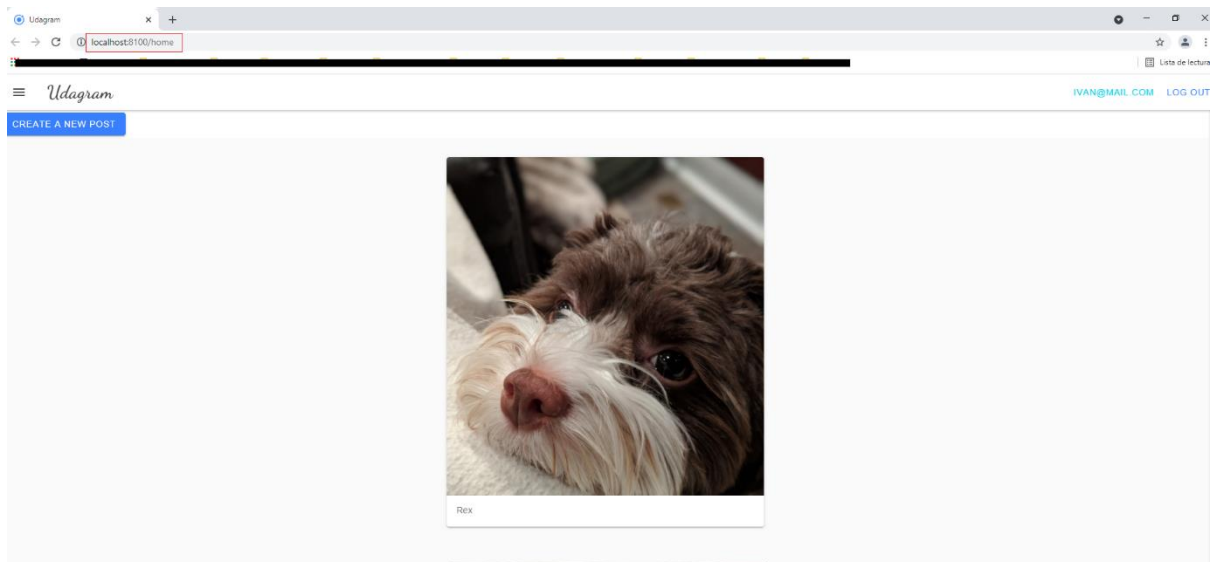
Containers and Microservices

- Divide an application into microservices:



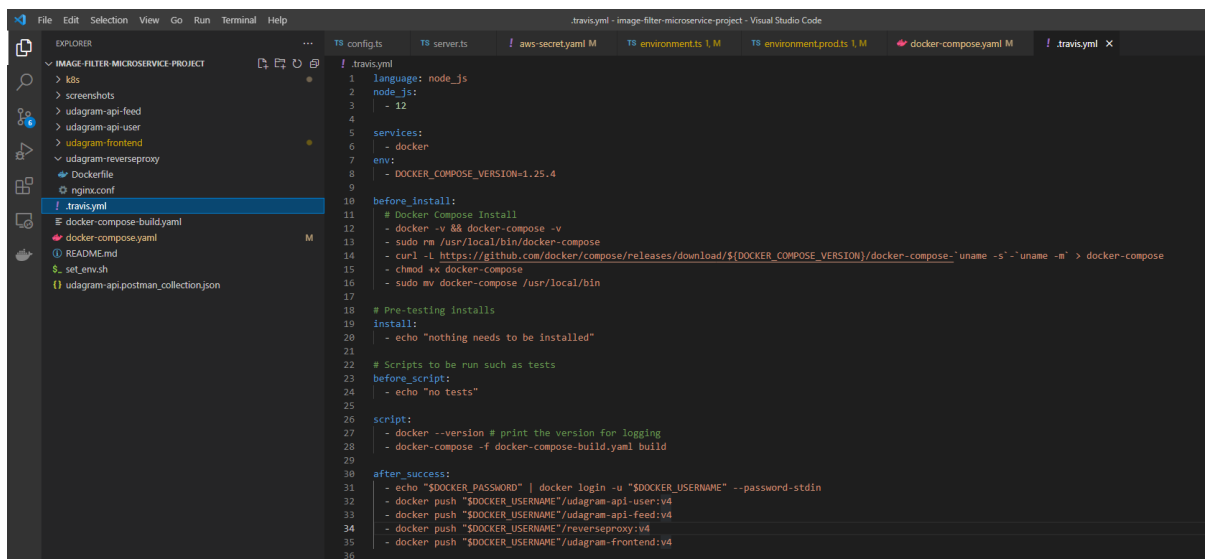
- Build and run a container image using Docker:





Independent Releases and Deployments

- Use Travis to build a CI/CD pipeline:



Search all repositories

My Repositories

Running (0/0)

+

- ✓

igomezgithub/image-filter-micro- # 35

⌚ Duration: 8 min 24 sec

📅 Finished: 55 minutes ago
- ✓

igomezgithub/simple-node-wit- # 2

⌚ Duration: 1 min 2 sec

📅 Finished: 13 days ago

igomezgithub / image-filter-microservice-project

build passing

Current

Branches

Build History

Pull Requests

More options

Default Branch

✓ main	# 34 passed	⇄ 1b7ba1e	✓	✓	✓		
📦 3 builds	📅 2 days ago	👤 igomezgithub					

Active Branches

✓ 05-add-screenshots	# 35 passed	⇄ 1b7ba1e	✓				
📦 1 build	📅 55 minutes ago	👤 igomezgithub					
✓ 04-set-up-kubernetes-cluster	# 32 passed	⇄ 16da902	✓	✓	✓	✓	✓
📦 16 builds	📅 2 days ago	👤 igomezgithub					
✓ 03-set-up-travis-ci	# 12 passed	⇄ 578b150	✓	✓	✗	✗	✗
📦 12 builds	📅 7 days ago	👤 igomezgithub					

Search all repositories

My Repositories

Running (0/0)

+

- ✓

igomezgithub/image-filter-micro- # 35

⌚ Duration: 8 min 24 sec

📅 Finished: 56 minutes ago
- ✓

igomezgithub/simple-node-wit- # 2

⌚ Duration: 1 min 2 sec

📅 Finished: 13 days ago

igomezgithub / image-filter-microservice-project

build passing

Current

Branches

Build History

Pull Requests

More options

✓

05-add-screenshots Merge pull request #7 from igomezgithub/04-set-up-kubernetes...

⇄ #35 passed

🔄 Restart build

Remove unused controllers

⇄ Commit 1b7ba1e

🔍 Compare 05-add-screenshots

📁 Branch 05-add-screenshots

👤 igomezgithub

👤 Node.js: 12

👤 AMD64

👤 DOCKER_COMPOSE_VERSION=1.25.4

Job log

View config

Worker information

build system information

\$ sudo systemctl start docker

\$ git clone --depth=50 --branch=05-add-screenshots https://github.com/igomezgithub/image-filter-microservice-project.git igomezgithub/image-filter-microservice-project

```
470 chunk {runtime} runtime.js, runtime.js.map (runtime) 9.77 kB [entry] [rendered]
471 chunk {shadow-css-4889ae62-23996f3f-js} shadow-css-4889ae62-23996f3f-js.js, shadow-css-4889ae62-23996f3f-js.js.map (shadow-css-4889ae62-23996f3f-js) 15.7 kB [rendered]
472 chunk {status-tap-32c72c43-js} status-tap-32c72c43-js.js, status-tap-32c72c43-js.js.map (status-tap-32c72c43-js) 1.83 kB [rendered]
473 chunk {styles} styles.js, styles.js.map (styles) 100 kB [initial] [rendered]
474 chunk {swipe-back-35ad8e37-js} swipe-back-35ad8e37-js.js, swipe-back-35ad8e37-js.js.map (swipe-back-35ad8e37-js) 2.67 kB [rendered]
475 chunk {swiper-bundle-8bab85e6-js} swiper-bundle-8bab85e6-js.js, swiper-bundle-8bab85e6-js.js.map (swiper-bundle-8bab85e6-js) 213 kB [rendered]
476 chunk {tap-click-ca00ce7f-js} tap-click-ca00ce7f-js.js, tap-click-ca00ce7f-js.js.map (tap-click-ca00ce7f-js) 6.32 kB [rendered]
477 chunk {vendor} vendor.js, vendor.js.map (vendor) 4.66 MB [initial] [rendered]
478 Date: 2021-09-12T09:46:37.290Z - Hash: 11af8b0dcebd08e6899 - Time: 10065ms
479 Removing intermediate container e09a85778aea
480 ----> b0c1140a331
481 Step 7/9 : FROM nginx:alpine
482 ----> 513f9a9d8749
483 Step 8/9 : COPY --from=ionic /usr/src/app/www /usr/share/nginx/html
484 ----> f095e33e1abb
485 Successfully built f095e33e1abb
486 Successfully tagged igomezdockerhub/udagram-frontend:v4
487 The command "docker-compose -f docker-compose-build.yaml build" exited with 0.
488 store build cache
489
490 $ echo "$DOCKER_PASSWORD" | docker login -u "$DOCKER_USERNAME" --password-stdin
491 $ docker push "$DOCKER_USERNAME"/udagram-api-user:v4
492 $ docker push "$DOCKER_USERNAME"/udagram-api-feed:v4
493 $ docker push "$DOCKER_USERNAME"/reverseproxy:v4
494 $ docker push "$DOCKER_USERNAME"/udagram-frontend:v4
495
496 Done. Your build exited with 0.
```



Starred repositories

☆ You can keep track of your favorite repositories here once you start starring!

Active repositories

My builds

☆	igomezgithub image-filter-microservi	DEFAULT BRANCH → main passed	LAST BUILD ✓ #35 passed	COMMIT → 1b7ba1e ↗	FINISHED 27 58 minutes ago	≡
☆	igomezgithub simple-node-with-travis	DEFAULT BRANCH ○ main	LAST BUILD ✓ #2 passed	COMMIT → 3b96be3 ↗	FINISHED 27 13 days ago	≡

igomezdockerhub

[Create Repository](#)

igomezdockerhub / **udagram-frontend**
Updated an hour ago

⊗ Not Scanned ☆ 0 ↓ 100 📄 Public

igomezdockerhub / **reverseproxy**
Updated an hour ago

⊗ Not Scanned ☆ 0 ↓ 81 📄 Public

igomezdockerhub / **udagram-api-feed**
Updated an hour ago

⊗ Not Scanned ☆ 0 ↓ 727 📄 Public

igomezdockerhub / **udagram-api-user**
Updated an hour ago

⊗ Not Scanned ☆ 0 ↓ 125 📄 Public

igomezdockerhub / **simple-node-with-travis**
Updated 13 days ago

⊗ Not Scanned ☆ 0 ↓ 4 📄 Public

igomezdockerhub / **simple-node**
Updated 13 days ago

⊗ Not Scanned ☆ 0 ↓ 4 📄 Public



Tip: Not finding your repository? Try switching namespace via the top left dropdown.

Service Orchestration with Kubernetes

- Deploy microservices using a Kubernetes cluster on AWS:
 - a) A screenshots of `kubectl` commands show the Frontend and API projects deployed in Kubernetes:

```
ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservices/Project - icroservices and Deploy/image-filter-microservice-project (05-add-screenshots)
$ kubectl get deployments
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
backend-feed        2/2     2             2           25h
backend-user        2/2     2             2           25h
frontend            1/1     1             1           25h
reverseproxy        1/1     1             1           25h
```

```
ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservices/Project - icroservices and Deploy/image-filter-microservice-project (05-add-screenshots)
$ kubectl describe deployments
Name:                backend-feed
Namespace:            default
CreationTimestamp:    Sat, 11 Sep 2021 10:14:13 +0100
Labels:               app=backend-feed
Annotations:          deployment.kubernetes.io/revision: 1
Selector:             app=backend-feed
Replicas:             2 desired | 2 updated | 2 total | 2 available | 0 unavailable
StrategyType:         RollingUpdate
MinReadySeconds:      0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels:  app=backend-feed
  Containers:
    backend-feed:
      Image:      igomezdockerhub/udagram-api-feed:v4
      Port:       <none>
      Host Port:  <none>
      Environment:
        URL:                <set to the key 'URL' of config map 'env-config'>      Optional: false
        AWS_MEDIA_BUCKET:    <set to the key 'AWS_MEDIA_BUCKET' of config map 'env-config'> Optional: false
        AWS_PROFILE:         <set to the key 'AWS_PROFILE' of config map 'env-config'> Optional: false
        AWS_REGION:         <set to the key 'AWS_REGION' of config map 'env-config'> Optional: false
        JWT_SECRET:         <set to the key 'JWT_SECRET' in secret 'env-secret'>   Optional: false
        POSTGRESS_DATABASE: <set to the key 'POSTGRESS_DATABASE' of config map 'env-config'> Optional: false
        POSTGRESS_HOST:     <set to the key 'POSTGRESS_HOST' of config map 'env-config'> Optional: false
        POSTGRESS_PASSWORD: <set to the key 'POSTGRESS_PASSWORD' in secret 'env-secret'> Optional: false
        POSTGRESS_USERNAME: <set to the key 'POSTGRESS_USERNAME' in secret 'env-secret'> Optional: false
  Mounts:
    /root/.aws from aws-secret (ro)
  Volumes:
    aws-secret:
      Type:          Secret (a volume populated by a Secret)
      SecretName:    aws-secret
      Optional:      false
  Conditions:
    Type      Status  Reason
    ----      -
    Available  True    MinimumReplicasAvailable
    Progressing  True    NewReplicaSetAvailable
  OldReplicaSets: <none>
  NewReplicaSet:  backend-feed-9fcb6ccff (2/2 replicas created)
  Events:         <none>
```

```

Name: backend-user
Namespace: default
CreationTimestamp: Sat, 11 Sep 2021 10:14:28 +0100
Labels: app=backend-user
Annotations: deployment.kubernetes.io/revision: 1
Selector: app=backend-user
Replicas: 2 desired | 2 updated | 2 total | 2 available | 0 unavailable
StrategyType: RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels: app=backend-user
  Containers:
    backend-user:
      Image: igomezdockerhub/udagram-api-user:v4
      Port: <none>
      Host Port: <none>
      Environment:
        URL: <set to the key 'URL' of config map 'env-config'> Optional: false
        AWS_MEDIA_BUCKET: <set to the key 'AWS_MEDIA_BUCKET' of config map 'env-config'> Optional: false
        AWS_PROFILE: <set to the key 'AWS_PROFILE' of config map 'env-config'> Optional: false
        AWS_REGION: <set to the key 'AWS_REGION' of config map 'env-config'> Optional: false
        JWT_SECRET: <set to the key 'JWT_SECRET' in secret 'env-secret'> Optional: false
        POSTGRESS_DATABASE: <set to the key 'POSTGRESS_DATABASE' of config map 'env-config'> Optional: false
        POSTGRESS_HOST: <set to the key 'POSTGRESS_HOST' of config map 'env-config'> Optional: false
        POSTGRESS_PASSWORD: <set to the key 'POSTGRESS_PASSWORD' in secret 'env-secret'> Optional: false
        POSTGRESS_USERNAME: <set to the key 'POSTGRESS_USERNAME' in secret 'env-secret'> Optional: false
      Mounts:
        /root/.aws from aws-secret (ro)
  Volumes:
    aws-secret:
      Type: Secret (a volume populated by a Secret)
      SecretName: aws-secret
      Optional: false
  Conditions:
    Type      Status Reason
    ----      -
    Available  True   MinimumReplicasAvailable
    Progressing True   NewReplicaSetAvailable
OldReplicaSets: <none>
NewReplicaSet: backend-user-56cdb99558 (2/2 replicas created)
Events: <none>

```

```

Name: frontend
Namespace: default
CreationTimestamp: Sat, 11 Sep 2021 10:15:02 +0100
Labels: app=frontend
Annotations: deployment.kubernetes.io/revision: 1
Selector: app=frontend
Replicas: 1 desired | 1 updated | 1 total | 1 available | 0 unavailable
StrategyType: RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels: api=external
         app=frontend
  Containers:
    frontend:
      Image: igomezdockerhub/udagram-frontend:v4
      Port: 80/TCP
      Host Port: 0/TCP
      Environment: <none>
      Mounts: <none>
      Volumes: <none>
  Conditions:
    Type      Status Reason
    ----      -
    Available  True   MinimumReplicasAvailable
    Progressing True   NewReplicaSetAvailable
OldReplicaSets: <none>
NewReplicaSet: frontend-7f47dd669f (1/1 replicas created)
Events: <none>

```

```

Name:          reverseproxy
Namespace:     default
CreationTimestamp: Sat, 11 Sep 2021 10:14:46 +0100
Labels:        app=reverseproxy
Annotations:    deployment.kubernetes.io/revision: 1
Selector:      app=reverseproxy
Replicas:      1 desired | 1 updated | 1 total | 1 available | 0 unavailable
StrategyType:  RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels:  app=reverseproxy
  Containers:
    reverseproxy:
      Image:   igomezdockerhub/reverseproxy:v4
      Port:    8080/TCP
      Host Port: 0/TCP
      Limits:
        cpu:    500m
        memory: 1Gi
      Requests:
        cpu:        250m
        memory:     64Mi
      Environment:  <none>
      Mounts:       <none>
      Volumes:      <none>
  Conditions:
    Type           Status  Reason
    ----           -
    Available       True    MinimumReplicasAvailable
    Progressing     True    NewReplicaSetAvailable
OldReplicaSets: <none>
NewReplicaSet:  reverseproxy-bfb5775bb (1/1 replicas created)
Events:         <none>

```

- b) The output of `kubect1 get pods` indicates that the pods are running successfully with the `STATUS` value `Running`:

```

PROBLEMS 2 OUTPUT TERMINAL DEBUG CONSOLE

ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud [
-microservice-project (05-add-screenshots)
$ kubect1 get pods
NAME                                READY   STATUS    RESTARTS   AGE
backend-feed-9fcb6ccff-5hq47        1/1     Running   0           25h
backend-feed-9fcb6ccff-dvjpw        1/1     Running   0           25h
backend-user-56cdb99558-pmxcx        1/1     Running   0           25h
backend-user-56cdb99558-wlsss        1/1     Running   0           25h
frontend-7f47dd669f-m5ssd           1/1     Running   0           25h
reverseproxy-bfb5775bb-v4j4q        1/1     Running   0           25h

```


- c) The output of `kubectl describe services` does not expose any sensitive strings such as database passwords:

```
ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud D
-microservice-project (05-add-screenshots)
$ kubectl describe services
Name:                backend-feed
Namespace:            default
Labels:               app=backend-feed
Annotations:          <none>
Selector:             app=backend-feed
Type:                 ClusterIP
IP:                   10.100.149.234
Port:                 8080 8080/TCP
TargetPort:           8080/TCP
Endpoints:            172.30.0.159:8080,172.30.1.149:8080
Session Affinity:     None
Events:               <none>

Name:                backend-user
Namespace:            default
Labels:               app=backend-user
Annotations:          <none>
Selector:             app=backend-user
Type:                 ClusterIP
IP:                   10.100.248.40
Port:                 8080 8080/TCP
TargetPort:           8080/TCP
Endpoints:            172.30.0.207:8080,172.30.1.243:8080
Session Affinity:     None
Events:               <none>

Name:                frontend
Namespace:            default
Labels:               app=frontend
Annotations:          <none>
Selector:             app=frontend
Type:                 ClusterIP
IP:                   10.100.7.88
Port:                 8100 8100/TCP
TargetPort:           80/TCP
Endpoints:            172.30.1.115:80
Session Affinity:     None
Events:               <none>
```

Name: kubernetes
Namespace: default
Labels: component=apiserver
provider=kubernetes
Annotations: <none>
Selector: <none>
Type: ClusterIP
IP: 10.100.0.1
Port: https 443/TCP
TargetPort: 443/TCP
Endpoints: 172.30.0.228:443,172.30.1.54:443
Session Affinity: None
Events: <none>

Name: publicfrontend
Namespace: default
Labels: app=frontend
Annotations: <none>
Selector: app=frontend
Type: LoadBalancer
IP: 10.100.77.218
LoadBalancer Ingress: a2739bf9539104768bc3c56041b3dcea-58075089.us-east-2.elb.amazonaws.com
Port: <unset> 80/TCP
TargetPort: 80/TCP
NodePort: <unset> 30780/TCP
Endpoints: 172.30.1.115:80
Session Affinity: None
External Traffic Policy: Cluster
Events: <none>

Name: publicreverseproxy
Namespace: default
Labels: app=reverseproxy
Annotations: <none>
Selector: app=reverseproxy
Type: LoadBalancer
IP: 10.100.88.159
LoadBalancer Ingress: a85b3be637240486aa7288bbdea0a178-1777650885.us-east-2.elb.amazonaws.com
Port: <unset> 8080/TCP
TargetPort: 8080/TCP
NodePort: <unset> 30997/TCP
Endpoints: 172.30.0.28:8080
Session Affinity: None
External Traffic Policy: Cluster
Events: <none>

Name: reverseproxy
Namespace: default
Labels: app=reverseproxy
Annotations: <none>
Selector: app=reverseproxy
Type: ClusterIP
IP: 10.100.129.167
Port: 8080 8080/TCP
TargetPort: 8080/TCP
Endpoints: 172.30.0.28:8080
Session Affinity: None
Events: <none>

- Use a reverse proxy to direct requests to the appropriate backend:

```

1 worker_processes 1;
2 events { worker_connections 1024; }
3 error_log /dev/stdout debug;
4 http {
5     sendfile on;
6     upstream user {
7         server backend-user:8080;
8     }
9     upstream feed {
10        server backend-feed:8080;
11    }
12    proxy_set_header    Host $host;
13    proxy_set_header    X-Real-IP $remote_addr;
14    proxy_set_header    X-NginX-Proxy true;
15    proxy_set_header    X-Forwarded-For $proxy_add_x_forwarded_for;
16    proxy_set_header    X-Forwarded-Host $server_name;
17    server {
18        listen 8080;
19        location /api/v0/feed {
20            proxy_pass    http://feed;
21        }
22        location /api/v0/users {
23            proxy_pass    http://user;
24        }
25    }
26 }

```

```

Name:                publicreverseproxy
Namespace:           default
Labels:              app=reverseproxy
Annotations:         <none>
Selector:            app=reverseproxy
Type:               LoadBalancer
IP:                 10.100.88.159
LoadBalancer Ingress: a85b3be637240486aa7288bbdea0a178-1777650885.us-east-2.elb.amazonaws.com
Port:               <unset> 8080/TCP
TargetPort:         8080/TCP
NodePort:           <unset> 30997/TCP
Endpoints:          172.30.0.28:8080
Session Affinity:   None
External Traffic Policy: Cluster
Events:             <none>

```

```

Name:                reverseproxy
Namespace:           default
Labels:              app=reverseproxy
Annotations:         <none>
Selector:            app=reverseproxy
Type:               ClusterIP
IP:                 10.100.129.167
Port:               8080 8080/TCP
TargetPort:         8080/TCP
Endpoints:          172.30.0.28:8080
Session Affinity:   None
Events:             <none>

```

- Configure scaling and self-healing for each service:

```
ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservice-project (05-add-screenshots)
$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
backend-feed-9fcb6ccff-5hq47        1/1     Running   0           26h
backend-feed-9fcb6ccff-dvjpw        1/1     Running   0           26h
backend-user-56cdb99558-pmxcx        1/1     Running   0           26h
backend-user-56cdb99558-wlsss        1/1     Running   0           26h
frontend-7f47dd669f-m5ssd           1/1     Running   0           26h
reverseproxy-bfb5775bb-v4j4q        1/1     Running   0           26h

ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservice-project (05-add-screenshots)
$ kubectl autoscale deployment backend-feed --cpu-percent=50 --min=1 --max=2
horizontalpodautoscaler.autoscaling/backend-feed autoscaled

ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservice-project (05-add-screenshots)
$ kubectl autoscale deployment backend-user --cpu-percent=50 --min=1 --max=2
horizontalpodautoscaler.autoscaling/backend-user autoscaled

ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservice-project (05-add-screenshots)
$ kubectl get hpa
NAME            REFERENCE                TARGETS          MINPODS   MAXPODS   REPLICAS   AGE
backend-feed    Deployment/backend-feed   <unknown>/50%    1         2         2          2m29s
backend-user     Deployment/backend-user   <unknown>/50%    1         2         2          31s
```

Review:

- I have add this settings in the deployment files (e.g. backend-feed-deployment.yaml):

```
> ! backend-feed-deployment.yaml
selector:
  matchLabels:
    app: backend-feed
template:
  metadata:
    labels:
      app: backend-feed
  spec:
    containers:
      - name: backend-feed
        image: igomezdockerhub/udagram-api-feed:v4
        imagePullPolicy: Always
        resources:
          requests:
            memory: "64Mi"
            cpu: "250m"
          limits:
            memory: "2048Mi"
            cpu: "1000m"
    env:
      - name: URL
        valueFrom:
          configMapKeyRef:
            name: env-config
            key: URL
      - name: AWS_MEDIA_BUCKET
        valueFrom:
          configMapKeyRef:
            name: env-config
```

- I have configured the metrics server and then the CPU is displayed:

```
ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservices/Project - Udagram - Refactor Mo
vice-project/k8s (05-add-screenshots)
$ kubectl apply -f https://github.com/kubernetes-sigs/metrics-server/releases/download/v0.3.7/components.yaml
clusterrole.rbac.authorization.k8s.io/system:aggregated-metrics-reader created
clusterrolebinding.rbac.authorization.k8s.io/metrics-server:system:auth-delegator created
rolebinding.rbac.authorization.k8s.io/metrics-server-auth-reader created
Warning: apiregistration.k8s.io/v1beta1 APIService is deprecated in v1.19+, unavailable in v1.22+; use apiregistration.k8s.io/v1 APIService
apiservice.apiregistration.k8s.io/v1beta1.metrics.k8s.io created
serviceaccount/metrics-server created
deployment.apps/metrics-server created
service/metrics-server created
clusterrole.rbac.authorization.k8s.io/system:metrics-server created
clusterrolebinding.rbac.authorization.k8s.io/system:metrics-server created

ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservices/Project - Udagram - Refactor Mo
vice-project/k8s (05-add-screenshots)
$ kubectl get deployment metrics-server -n kube-system
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
metrics-server 1/1     1            1           12s

ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservices/Project - Udagram - Refactor Mo
vice-project/k8s (05-add-screenshots)
$ kubectl get hpa
NAME          REFERENCE          TARGETS   MINPODS   MAXPODS   REPLICAS   AGE
backend-feed  Deployment/backend-feed  0%/50%    1         2         1          11m
backend-user  Deployment/backend-user  0%/50%    1         2         1          10m
```

```

ivang@DESKTOP-RRSSCDF MINGW64 /d/Learning/0_platforms/Udacity/01.Cloud Developer/04.Monolith to Microservices/Project - Udiagram - Refa
vice-project/k8s (05-add-screenshots)
$ kubectl describe hpa
Name:                                backend-feed
Namespace:                           default
Labels:                               <none>
Annotations:                           <none>
CreationTimestamp:                     Sun, 12 Sep 2021 20:09:25 +0100
Reference:                             Deployment/backend-feed
Metrics:                               ( current / target )
  resource cpu on pods (as a percentage of request): 0% (0) / 50%
  AbleToScale      True      ReadyForNewScale      recommended size matches current size
  ScalingActive    True      ValidMetricFound      the HPA was able to successfully calculate a replica count from cpu resource utilization (
percentage of request)
  ScalingLimited   True      TooFewReplicas        the desired replica count is less than the minimum replica count
Events:
Type      Reason                                     Age          From          Message
-----
Warning   FailedComputeMetricsReplicas             56m (x12 over 59m) horizontal-pod-autoscaler invalid metrics (1 invalid out of 1), first er
ror is: failed to get cpu utilization: unable to get metrics for resource cpu: unable to fetch metrics from resource metrics API: the
server could not find the requested resource (get pods.metrics.k8s.io)
Warning   FailedGetResourceMetric                  54m (x21 over 59m) horizontal-pod-autoscaler failed to get cpu utilization: unable to get m
etrics for resource cpu: unable to fetch metrics from resource metrics API: the server could not find the requested resource (get pods
.metrics.k8s.io)

```

Debugging, Monitoring, and Logging

- Use logs to capture metrics for debugging a microservices deployment:

```

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actor Monolith to Microservices and Deploy/image-filter-microservice-project (05-add-screenshots)
$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
backend-feed-9fcb6ccff-5hq47        1/1     Running   0           26h
backend-feed-9fcb6ccff-dvjpw        1/1     Running   0           26h
backend-user-56cdb99558-pmxcx       1/1     Running   0           26h
backend-user-56cdb99558-wlsss       1/1     Running   0           26h
frontend-7f47dd669f-m5ssd          1/1     Running   0           26h
reverseproxy-bfb5775bb-v4j4q        1/1     Running   0           26h

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actor Monolith to Microservices and Deploy/image-filter-microservice-project (05-add-screenshots)
$ kubectl logs backend-user-56cdb99558-pmxcx

> udagram-api@2.0.0 prod /usr/src/app
> tsc && node ./www/server.js

Initialize database connection...
Executing (default): CREATE TABLE IF NOT EXISTS "User" ("email" VARCHAR(255) , "password_hash" VARCHAR(255), "createdAt" TIMESTAMP WI
TH TIME ZONE, "updatedAt" TIMESTAMP WITH TIME ZONE, PRIMARY KEY ("email"));
Executing (default): SELECT i.relname AS name, ix.indisprimary AS primary, ix.indisunique AS unique, ix.indkey AS indkey, array_agg(a
.attname) AS column_indexes, array_agg(a.attname) AS column_names, pg_get_indexdef(ix.indexrelid) AS definition FROM pg_class t, pg_cl
ass i, pg_index ix, pg_attribute a WHERE t.oid = ix.indrelid AND i.oid = ix.indexrelid AND a.attrelid = t.oid AND t.relkind = 'r' and
t.relname = 'User' GROUP BY i.relname, ix.indexrelid, ix.indisprimary, ix.indisunique, ix.indkey ORDER BY i.relname;
server running http://a2739bf9539104768bc3c56041b3dcea-58075089.us-east-2.elb.amazonaws.com:8100
press CTRL+C to stop server
Executing (default): SELECT "email", "password_hash", "createdAt", "updatedAt" FROM "User" AS "User" WHERE "User"."email" = 'ivan@mail
1.com';

```

Web Page

URL: <http://a2739bf9539104768bc3c56041b3dcea-58075089.us-east-2.elb.amazonaws.com/>

