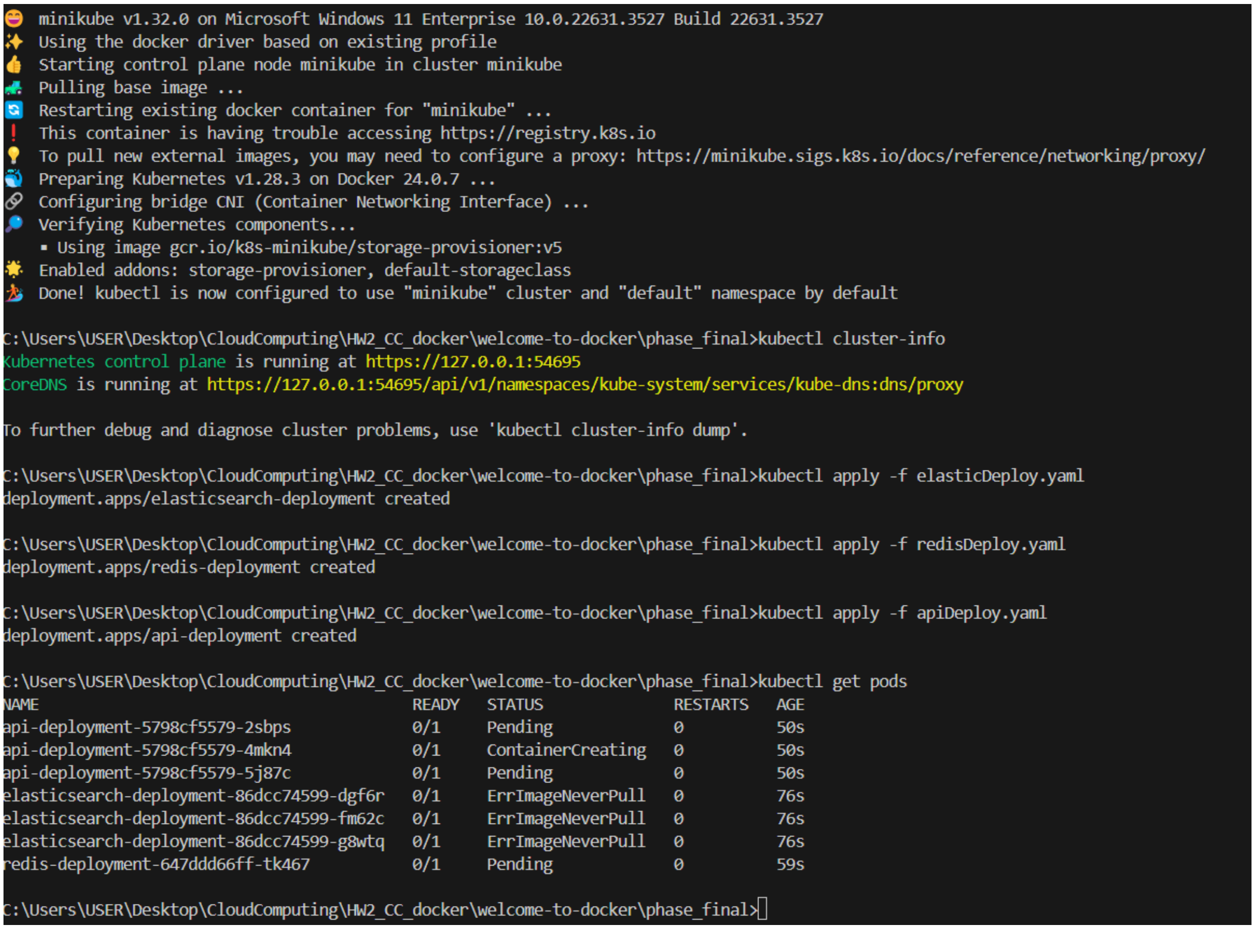
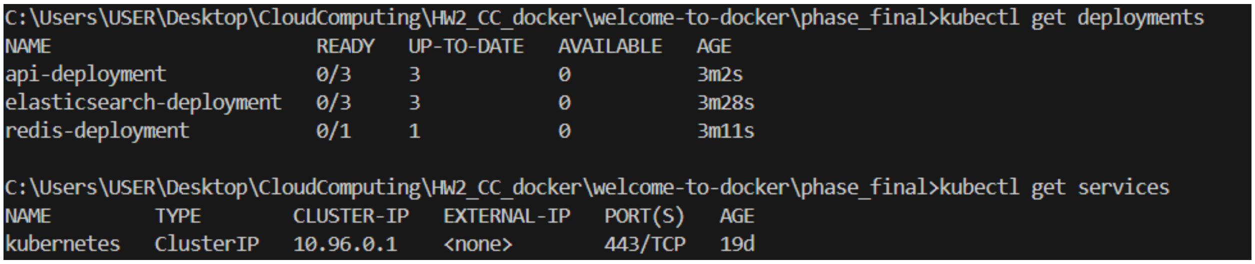
ساخت پاد با deployment ها:



```
😄  minikube v1.32.0 on Microsoft Windows 11 Enterprise 10.0.22631.3527 Build 22631.3527
✨  Using the docker driver based on existing profile
👍  Starting control plane node minikube in cluster minikube
🚜  Pulling base image ...
🔄  Restarting existing docker container for "minikube" ...
❗  This container is having trouble accessing https://registry.k8s.io
💡  To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/
🐳  Preparing Kubernetes v1.28.3 on Docker 24.0.7 ...
🔗  Configuring bridge CNI (Container Networking Interface) ...
🔎  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟  Enabled addons: storage-provisioner, default-storageclass
🏄  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl cluster-info
Kubernetes control plane is running at https://127.0.0.1:54695
CoreDNS is running at https://127.0.0.1:54695/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl apply -f elasticDeploy.yaml
deployment.apps/elasticsearch-deployment created

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl apply -f redisDeploy.yaml
deployment.apps/redis-deployment created

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl apply -f apiDeploy.yaml
deployment.apps/api-deployment created

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl get pods
NAME                                        READY   STATUS              RESTARTS   AGE
api-deployment-5798cf5579-2sbps             0/1     Pending             0          50s
api-deployment-5798cf5579-4mkn4             0/1     ContainerCreating   0          50s
api-deployment-5798cf5579-5j87c             0/1     Pending             0          50s
elasticsearch-deployment-86dcc74599-dgf6r   0/1     ErrImageNeverPull   0          76s
elasticsearch-deployment-86dcc74599-fm62c   0/1     ErrImageNeverPull   0          76s
elasticsearch-deployment-86dcc74599-g8wtq   0/1     ErrImageNeverPull   0          76s
redis-deployment-647ddd66ff-tk467           0/1     Pending             0          59s

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>
```

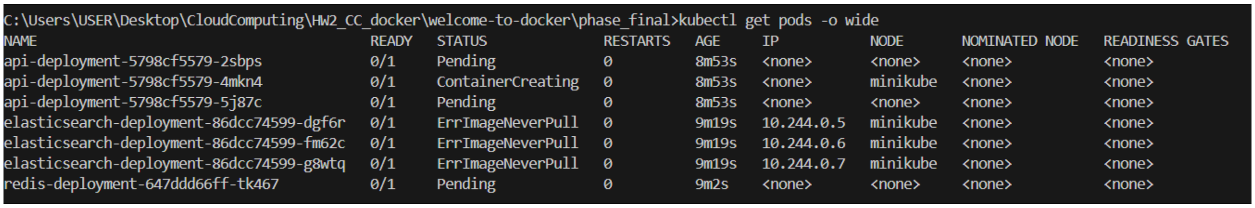


```
C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl get deployments
NAME                       READY   UP-TO-DATE   AVAILABLE   AGE
api-deployment             0/3     3            0           3m2s
elasticsearch-deployment   0/3     3            0           3m28s
redis-deployment           0/1     1            0           3m11s

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl get services
NAME         TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP   19d
```

همانطور که مشاهده می‌شود، نام پادها براساس فیلد name در بخش metadata مربوط به deployment، تعیین شده است.

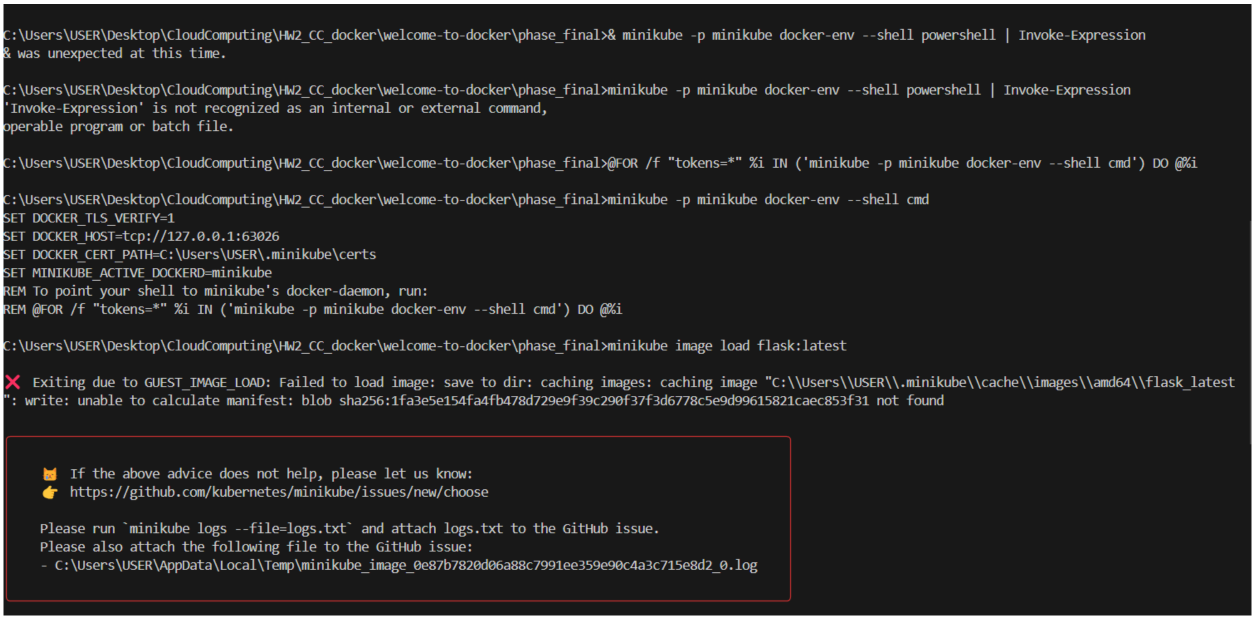
با دستور describe pods، اطلاعات کاملا مشخص میشود ولی خیلی طولانی است و برای مقایسه مناسب نیست.

دستور دیگری get pods –o wide با نام ذکر شده، خلاصه اطلاعات را بازگو میکند که مشخص میشود IPها متفاوت است:

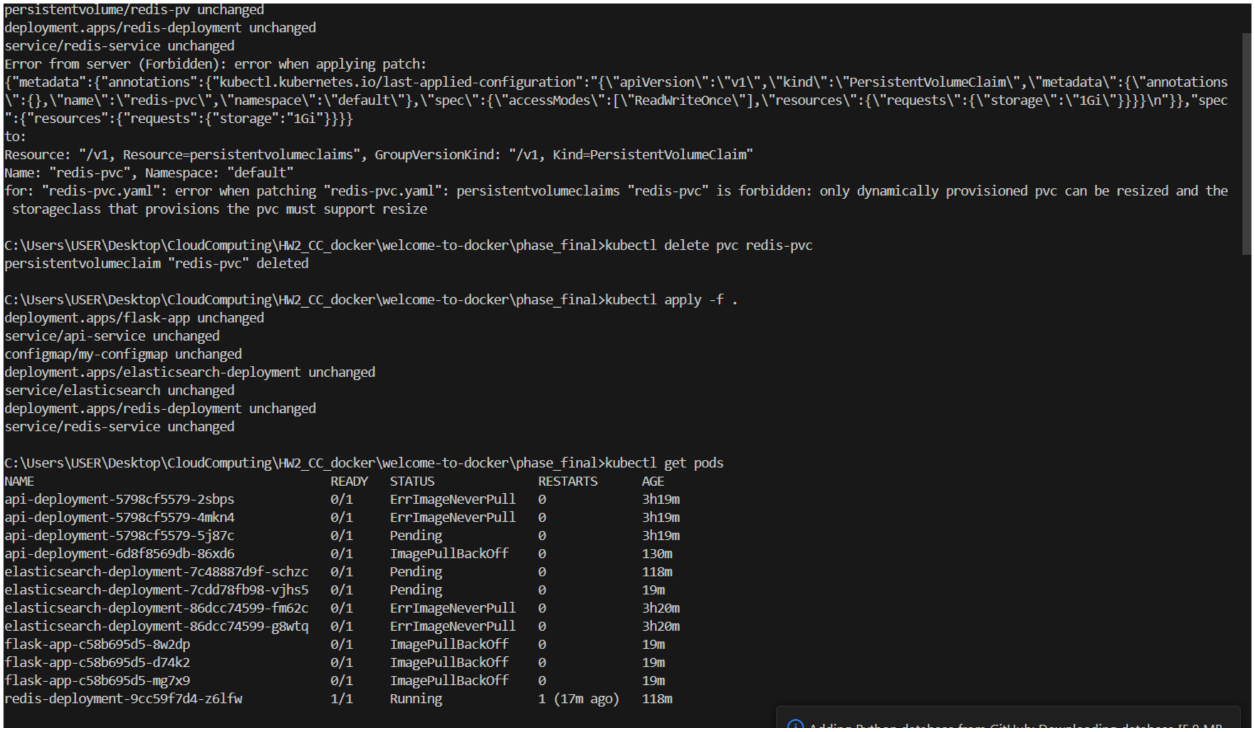


```
C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl get pods -o wide
NAME                                       READY   STATUS              RESTARTS   AGE     IP           NODE       NOMINATED NODE   READINESS GATES
api-deployment-5798cf5579-2sbps            0/1     Pending             0          8m53s   <none>       <none>     <none>           <none>
api-deployment-5798cf5579-4mkn4            0/1     ContainerCreating   0          8m53s   <none>       minikube   <none>           <none>
api-deployment-5798cf5579-5j87c            0/1     Pending             0          8m53s   <none>       <none>     <none>           <none>
elasticsearch-deployment-86dcc74599-dgf6r  0/1     ErrImageNeverPull   0          9m19s   10.244.0.5   minikube   <none>           <none>
elasticsearch-deployment-86dcc74599-fm62c  0/1     ErrImageNeverPull   0          9m19s   10.244.0.6   minikube   <none>           <none>
elasticsearch-deployment-86dcc74599-g8wtq  0/1     ErrImageNeverPull   0          9m19s   10.244.0.7   minikube   <none>           <none>
redis-deployment-647ddd66ff-tk467          0/1     Pending             0          9m2s    <none>       <none>     <none>           <none>
```

تعیین آدرس ip برای دسترسی به پادها، توسط سرویس ClusterIP صورت می‌گیرد؛ دلیل اینکه نیازی به مشخص کردن این سرویس خاص در فایل service وجود ندارد، این است که سرویس default به طور پیش‌فرض، ClusterIP می‌باشد.



```
C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>& minikube -p minikube docker-env --shell powershell | Invoke-Expression
& was unexpected at this time.

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>minikube -p minikube docker-env --shell powershell | Invoke-Expression
'Invoke-Expression' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>@FOR /f "tokens=*" %i IN ('minikube -p minikube docker-env --shell cmd') DO @%i

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>minikube -p minikube docker-env --shell cmd
SET DOCKER_TLS_VERIFY=1
SET DOCKER_HOST=tcp://127.0.0.1:63026
SET DOCKER_CERT_PATH=C:\Users\USER\.minikube\certs
SET MINIKUBE_ACTIVE_DOCKERD=minikube
REM To point your shell to minikube's docker-daemon, run:
REM @FOR /f "tokens=*" %i IN ('minikube -p minikube docker-env --shell cmd') DO @%i

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>minikube image load flask:latest

❌  Exiting due to GUEST_IMAGE_LOAD: Failed to load image: save to dir: caching images: caching image "C:\\Users\\USER\\.minikube\\cache\\images\\amd64\\flask_latest
": write: unable to calculate manifest: blob sha256:1fa3e5e154fa4fb478d729e9f39c290f37f3d6778c5e9d99615821caec853f31 not found


    😿  If the above advice does not help, please let us know:
    👉  https://github.com/kubernetes/minikube/issues/new/choose

    Please run `minikube logs --file=logs.txt` and attach logs.txt to the GitHub issue.
    Please also attach the following file to the GitHub issue:
    - C:\Users\USER\AppData\Local\Temp\minikube_image_0e87b7820d06a88c7991ee359e90c4a3c715e8d2_0.log
```



```
persistentvolume/redis-pv unchanged
deployment.apps/redis-deployment unchanged
service/redis-service unchanged
Error from server (Forbidden): error when applying patch:
{"metadata":{"annotations":{"kubectl.kubernetes.io/last-applied-configuration":"{\"apiVersion\":\"v1\",\"kind\":\"PersistentVolumeClaim\",\"metadata\":{\"annotations
\":{},\"name\":\"redis-pvc\",\"namespace\":\"default\"},\"spec\":{\"accessModes\":[\"ReadWriteOnce\"],\"resources\":{\"requests\":{\"storage\":\"1Gi\"}}}}\n"}},"spec
":{"resources":{"requests":{"storage":"1Gi"}}}}
to:
Resource: "/v1, Resource=persistentvolumeclaims", GroupVersionKind: "/v1, Kind=PersistentVolumeClaim"
Name: "redis-pvc", Namespace: "default"
for: "redis-pvc.yaml": error when patching "redis-pvc.yaml": persistentvolumeclaims "redis-pvc" is forbidden: only dynamically provisioned pvc can be resized and the
 storageclass that provisions the pvc must support resize

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl delete pvc redis-pvc
persistentvolumeclaim "redis-pvc" deleted

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl apply -f .
deployment.apps/flask-app unchanged
service/api-service unchanged
configmap/my-configmap unchanged
deployment.apps/elasticsearch-deployment unchanged
service/elasticsearch unchanged
deployment.apps/redis-deployment unchanged
service/redis-service unchanged

C:\Users\USER\Desktop\CloudComputing\HW2_CC_docker\welcome-to-docker\phase_final>kubectl get pods
NAME                                       READY   STATUS              RESTARTS      AGE
api-deployment-5798cf5579-2sbps            0/1     ErrImageNeverPull   0             3h19m
api-deployment-5798cf5579-4mkn4            0/1     ErrImageNeverPull   0             3h19m
api-deployment-5798cf5579-5j87c            0/1     Pending             0             3h19m
api-deployment-6d8f8569db-86xd6            0/1     ImagePullBackOff    0             130m
elasticsearch-deployment-7c48887d9f-schzc  0/1     Pending             0             118m
elasticsearch-deployment-7cdd78fb98-vjhs5  0/1     Pending             0             19m
elasticsearch-deployment-86dcc74599-fm62c  0/1     ErrImageNeverPull   0             3h20m
elasticsearch-deployment-86dcc74599-g8wtq  0/1     ErrImageNeverPull   0             3h20m
flask-app-c58b695d5-8w2dp                  0/1     ImagePullBackOff    0             19m
flask-app-c58b695d5-d74k2                  0/1     ImagePullBackOff    0             19m
flask-app-c58b695d5-mg7x9                  0/1     ImagePullBackOff    0             19m
redis-deployment-9cc59f7d4-z6lfw           1/1     Running             1 (17m ago)   118m
```