

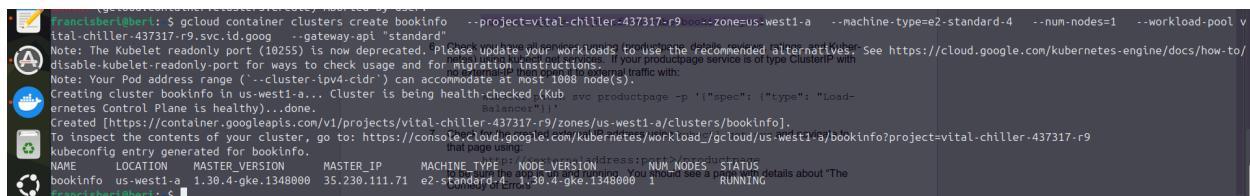
AIOPS LAB 4 DOCUMENTATION

All screenshots are also provided in the different folders for different tasks.

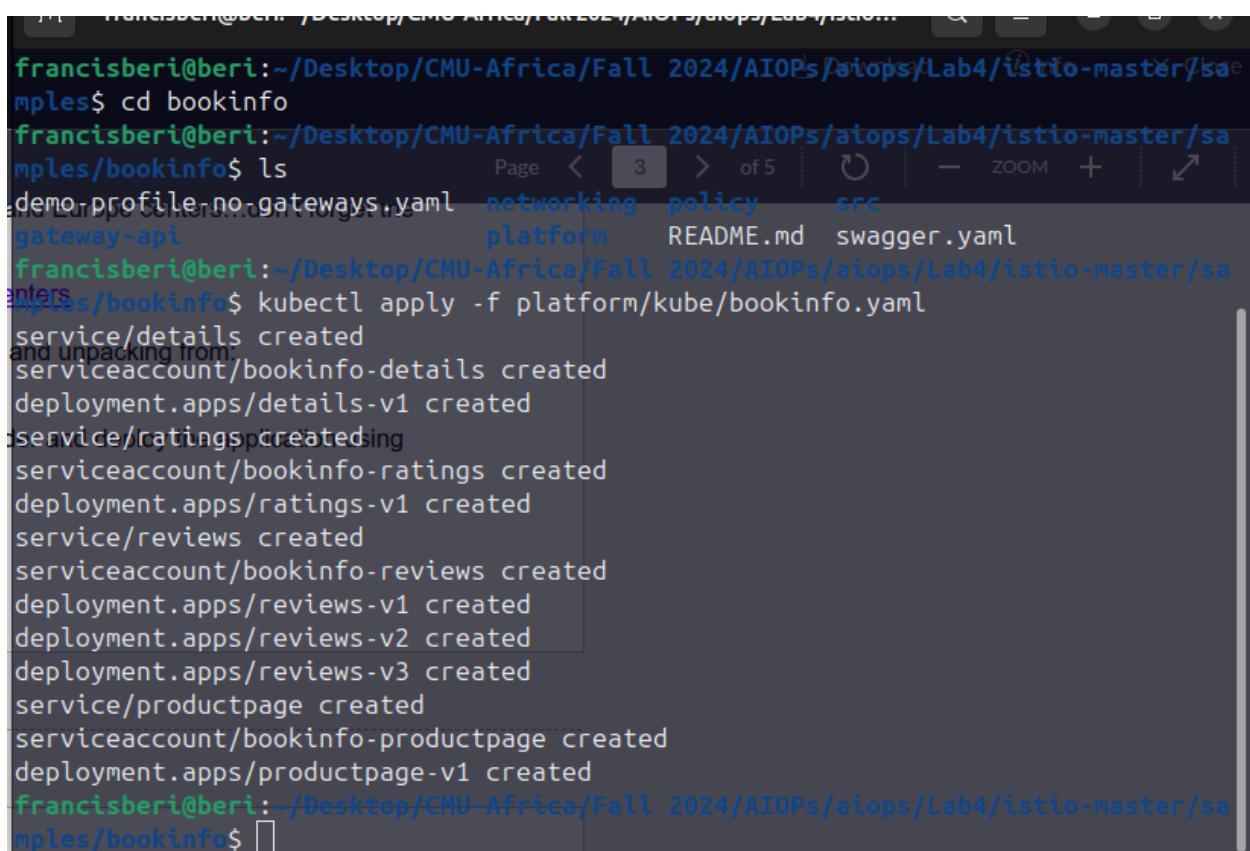
TASK 1:

- Screenshots from Task 1
- Default pod count, scaled up, output of "describes", output of "logs"

Creating the cluster and deploying to the cluster

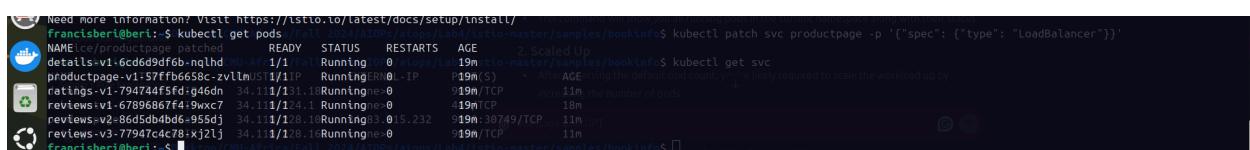


```
Francisberi@beri: ~$ gcloud container clusters create bookinfo --project=vital-chiller-437317-r9 --zone=us-west1-a --machine-type=e2-standard-4 --num-nodes=1 --workload-pool vital-chiller-437317-r9.svc.id.goog --gateway-api "standard"
Note: The Kubelet readonly port (10255) is now deprecated. Please update your workloads to use the recommended alternatives. See https://cloud.google.com/kubernetes-engine/docs/how-to/disable-kubelet-readonly-port for ways to check usage and for migration instructions. If your productpage service is of type ClusterIP with traffic on port 10255, you should consider changing its type to LoadBalancer or Ingress.
Note: Your Pod address range ('--cluster-ipv4-cidr') can accommodate at most 1008 node(s).
Creating cluster bookinfo in us-west1-a... Cluster is being health-checked [Kub... svc productpage -p ("spec": {"type": "LoadBal...ernetes Control Plane is healthy)...done.
Created [https://container.googleapis.com/v1/projects/vital-chiller-437317-r9/zones/us-west1-a/clusters/bookinfo].
To inspect the contents of your cluster, go to: https://console.cloud.google.com/kubernetes/workload/gcloud/us-west1-a/bookinfo?project=vital-chiller-437317-r9
kubeconfig entry generated for bookinfo.
NAME LOCATION MASTER_VERSION MASTER_IP MACHINE_TYPE NODE_VERSION ADDRESS NUM_NODES STATUS
bookinfo us-west1-a 1.30.4-gke.1348000 35.230.111.71 e2-standard-4 1.30.4-gke.1348000 1 RUNNING
Francisberi@beri: ~$
```



```
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples$ cd bookinfo
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ ls
demo-profile.no-gateways.yaml  networking  policy  src
gateway-api  platform  README.md  swagger.yaml
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples$ kubectl apply -f platform/kube/bookinfo.yaml
service/details created
and unpacking from
serviceaccount/bookinfo-details created
deployment.apps/details-v1 created
service/ratings created
serviceaccount/bookinfo-ratings created
deployment.apps/ratings-v1 created
service/reviews created
serviceaccount/bookinfo-reviews created
deployment.apps/reviews-v1 created
deployment.apps/reviews-v2 created
deployment.apps/reviews-v3 created
service/productpage created
serviceaccount/bookinfo-productpage created
deployment.apps/productpage-v1 created
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$
```

Getting/displaying the pods and their count before scaling.



```
Francisberi@beri: ~$ kubectl get pods -f /tmp/2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl patch svc productpage -p '{"spec": {"type": "LoadBalancer"}}'
NAME          READY   STATUS    RESTARTS   AGE
details-v1-6cd69df6b-nqlhd   1/1   Running   0          19m
productpage-v1-57fb6658c-zvilm   1/1   IP        19m
ratings-v1-794744f5fd-g46dn   34/34  Running   0          19m
reviews-v1-6789687f4-9wxc7   34/34  Running   0          19m
reviews-v2-86d5dbbd6-955dj   34/34  Running   3,015.232  19m
reviews-v3-77947dc78-xj2lj   34/34  Running   0          19m
Francisberi@beri: ~$ kubectl get pods -f /tmp/2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$
```

```
francisberi@beri: ~$ kubectl get deployments -o yaml | kubectl patch svc productpage -p '{"spec": {"type": "LoadBalancer"}}'
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
details-v1    1/1     1           1           25m
productpage-v1 1/1     1           1           24m
reviews-v1    1/1     1           1           54m
reviews-v2    1/1     1           1           25m
reviews-v3    1/1     1           1           25m
francisberi@beri: ~$
```

```
Francisberi@beri: ~$ kubectl get deployment ratings-v1
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
ratings-v1 1/1     1           1           54m
Francisberi@beri: ~$
```

13. Be sure to capture small screen shots of each of the above steps (just the section of your window showing output) and combine them in your lab response in GitHub.

Scaling reviews and rating services.

Scaling is done to ensure the application can handle varying loads effectively. By scaling the reviews/rating service, we are making it capable of processing more requests concurrently, improving both the availability and performance of the services.

```
Francisberi@beri: ~$ kubectl scale deployment reviews-v1 --replicas=3
deployment.apps/reviews-v1 scaled
Francisberi@beri: ~$ kubectl get deployments
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
details-v1 1/1     1           1           25m
productpage-v1 1/1     1           1           25m
ratings-v1 1/1     1           1           25m
reviews-v1 3/3     3           3           25m
reviews-v2 1/1     1           1           25m
reviews-v3 1/1     1           1           25m
Francisberi@beri: ~$
```



```
Francisberi@beri: ~$ kubectl get deployment ratings-v1
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
ratings-v1 2/2     2           2           81m
Francisberi@beri: ~$
```

Getting pods after scaling.

```
Francisberi@beri: ~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
details-v1-6cd6d9f6b-nqlhd  1/1     Running   0          26m
productpage-v1-57ffb6658c-zvilm  1/1     Running   0          26m
ratings-v1-794744f5fd-g46dn  1/1     Running   0          26m
reviews-v1-67896867f4-6rf2z   1/1     Running   0          65s
reviews-v1-67896867f4-9wxz7  1/1     Running   0          26m
reviews-v1-67896867f4-w66gm  1/1     Running   0          65s
reviews-v2-86d5dbabd6-95sdj  1/1     Running   0          26m
reviews-v3-77947c4c78-xj2lj   1/1     Running   0          26m
Francisberi@beri: ~$
```

Feel free to repeat the scaling for any of the other deployments if needed. Let me know if you have any questions!

```

Oct 10 00:34 francisberi@bert:~ [REDACTED]
Tolerations: canvas.cmu.edu/courses/EE-151b-4/node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events: Type Reason Age From Message
Normal Scheduled 8m39s default-scheduler Successfully assigned default/reviews-v1-67896867f4-6rf2z to gke-bookinfo-default-pool-1bde3411-9s0l
Normal Pulled 8m38s kubelet Container image "dokcer.io/istio/examples-bookinfo-reviews-v1:1.20.2" already present on machine
Normal Created 8m38s kubelet Created container reviews
Normal Started 8m38s kubelet Started container reviews
francisberi@bert: $ kubectl get deployment ratings-v1
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
ratings-v1  1/1     1           1           54m
francisberi@bert: $ kubectl scale deployment ratings-v1 --replicas=2
deployment.apps/ratings-v1 scaled
francisberi@bert: $ kubectl get deployment ratings-v1
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
ratings-v1  2/2     2           2           55m
francisberi@bert: $ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
details-v1-6cd6d9df6b-nqlhd  1/1     Running   0          54m
productpage-v1-57ff6658c-zvllm 1/1     Running   0          54m
ratings-v1-794744f5fd-g46dn  1/1     Running   0          54m
ratings-v1-794744f5fd-ptk2j  1/1     Running   0          49s
reviews-v1-67896867f4-6rf2z  1/1     Running   0          54m
reviews-v1-67896867f4-9wxc7  1/1     Running   0          54m
reviews-v1-67896867f4-w66pm  1/1     Running   0          54m
reviews-v2-86d5db4bd6-95sdj  1/1     Running   0          54m
reviews-v3-77947c4c78-xj2lj  1/1     Running   0          54m
francisberi@bert: $ kubectl logs ratings-v1-794744f5fd-ptk2j
Server listening on: http://0.0.0.0:9080
Server listening on: http://0.0.0.0:9080
GET /ratings/0
1. Issue kubectl logs <new pod ID> to verify it's up and running and listening on port 9080.
francisberi@bert: $ kubectl logs ratings-v1-794744f5fd-ptk2j 9080.
Server listening on: http://0.0.0.0:9080
francisberi@bert: $ kubectl logs ratings-v1-794744f5fd-ptk2j
2. Scale your ratings-v1 deployment back down to 1 replica by again using the kubectl scale command. Issue kubectl get pods to verify only one ratings pod is now running.
francisberi@bert: $ kubectl get deployment ratings-v1
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
ratings-v1  2/2     2           2           81m
francisberi@bert: $ kubectl scale deployment ratings-v1 --replicas=1
Lab Task 2 - Build and deploy a new image to GKE
francisberi@bert: $ kubectl get deployment ratings-v1
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
ratings-v1  1/1     1           1           82m
Now that you're familiar with basic K8s operations on GKE we'll modify the source code for one of the services and redeploy its new image from your laptop to Docker hub and then out to
francisberi@bert: $ [REDACTED]

```

Describe a Specific Pod: This is to monitor the application if the application provides any endpoints (like a web UI), and we can check them to make sure they are running properly.

```

Oct 9 23:45 francisberi@bert:~ [REDACTED]
francisberi@bert: $ kubectl describe pod reviews-v1-67896867f4-6rf2z
Name:           reviews-v1-67896867f4-6rf2z
Namespace:      default
Priority:      0
Service Account: bookinfo-reviews
Node:          gke-bookinfo-default-pool-1bde3411-9s0l/10.138.0.5
Start Time:    Wed, 09 Oct 2024 23:36:59 -0700
Labels:         pod-template-hash=67896867f4
Annotations:   <none>
Status:        Running
IP:           10.64.0.19
IPs:
  IP: 10.64.0.19
Controlled By: ReplicaSet/reviews-v1-67896867f4
Containers:
  reviews:
    Container ID:  docker://d70122a4a453d3e9629a69f7a401d809fe6b943fd97f91786677d2c7fb1e
    Image:          docker.io/istio/examples-bookinfo-reviews-v1:1.20.2
    Image ID:      docker://d70122a4a453d3e9629a69f7a401d809fe6b943fd97f91786677d2c7fb1e
    Port:          9080/TCP
    Host Port:    0/TCP
    State:        Running
    Ready:        True
    Restart Count: 0
    Environment:
      LOC_DIR: /tmp/logs
    Mounts:
      /opt/ibm/wlp/output from wlp-output (rw)
      /tmp from tmp (rw)
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-2j9k4 (ro)
Conditions:
  Type        Status
  PodReadyToStartContainers  True
  Initialized  True
  Ready       True
  ContainersReady  True
  PodsScheduled  True
Volumes:
  wlp-output:
    Type:  EmptyDir (a temporary directory that shares a pod's lifetime)
    Medium:  Memory
    SizeLimit:  <unset>
francisberi@bert: $ kubectl logs reviews-v1-67896867f4-6rf2z
[REDACTED]

```

```

Volumes: bind implementation
wlp-output:
  Type: HostPathEmptyDir (a temporary directory that shares a pod's lifetime)
  Medium:
  SizeLimit: <unset>
tmp:
  Type: Device EphemeralDir (a temporary directory that shares a pod's lifetime)
  Medium:
  SizeLimit: <unset>
kube-api-access-Zj9k4:
  SecretName: projected (Projected a volume that contains injected data from multiple sources)
  TokenExpirationSeconds: 3607
  ConfigMapName: kube-root-ca.crt
  ConfigMapOptional: <nil>
  AllowVolumeMounts: true
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
          node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Normal  Scheduled  8m39s  default-scheduler  Successfully assigned default/reviews-v1-67896867f4-6rf2z to gke-bookinfo-default-pool-1bde3411-9s0l
  Normal  Pulled   8m38s  kubelet        Container image "docker.io/istio/examples-bookinfo-reviews:v1:1.20.2" already present on machine
  Normal  Created  8m38s  kubelet        Created container reviews (Message ChatGPT)
  Normal  Started  8m38s  kubelet        Started container reviews
francisberi@beri:~$ 

```

```

Francisberi@beri: $ kubectl logs reviews-v1-67896867f4-6rf2z
A WARNING: Unknown module: idk.management.agent specified to --add-exports
A WARNING: Unknown module: idk.attache specified to --add-exports
Launching defaultServer [Open Liberty 24.0.0.1/wlp-1.0.85.cl240120240115-2042] on Eclipse OpenJ9 VM, version 17.0.10+7 (en_US)
[AUDIT] [CWKKF0001I] The server defaultServer has been launched.
[AUDIT] [CWKKF00093A] Processing configuration drop-in resource: /opt/ol/wlp/usr/lib/servers/defaultServer/configDropins/defaults/keystore.xml
[AUDIT] [CWKKF00093A] Processing configuration drop-in resource: /opt/ol/wlp/usr/lib/servers/defaultServer/configDropins/defaults/open-default-port.xml
[AUDIT] [CWKTF0016I] Web application available (default_host): http://reviews-v1-67896867f4-6rf2z:9080/
[AUDIT] [CWKZF0001I] Application reviews-app started in 0.500 seconds.
[AUDIT] [CWKZF0012I] The server installed the following features: [jaxrs-2.0, jaxrsClient-2.0, json-1.0, jsonp-1.0, servlet-3.1].
[AUDIT] [CWKZF0011I] The defaultServer server is ready to run a smarter planet. The defaultServer server started in 4.084 seconds.
francisberi@beri: $ 

```

```

Oct 10 00:41 1
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl patch svc productpage -p '{"spec": {"type": "LoadBalancer"}}'
Patch failed: error: flag needs an argument: 'p' in -p
See 'kubectl patch --help' for usage.
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl patch svc productpage
error: must specify --patch or --patch-file containing the contents of the patch
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl patch svc productpage -p '{"spec": {"type": "LoadBalancer"}}'
Patch failed: error: Unknown module: jdk.management.agent specified to --add-exports
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl patch svc productpage -p '{"spec": {"type": "LoadBalancer"}}'
service/productpage patched
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get svc
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get svc
NAME      TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
details   ClusterIP   34.118.231.187   <none>           9080/TCP        6m
kubernetes ClusterIP   34.118.224.1    <none>           443/TCP         7m
productpage LoadBalancer 34.118.228.10   34.83.115.232  9080:30749/TCP  6m
ratings    ClusterIP   34.118.228.169   <none>           9080/TCP        6m
reviews    ClusterIP   34.118.235.156   <none>           9080/TCP        6m
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get svc
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get svc
NAME      TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
details   ClusterIP   34.118.231.187   <none>           9080/TCP        6m
kubernetes ClusterIP   34.118.224.1    <none>           443/TCP         7m
productpage LoadBalancer 34.118.228.10   34.83.115.232  9080:30749/TCP  6m
ratings    ClusterIP   34.118.228.169   <none>           9080:32025/TCP  6m
reviews    ClusterIP   34.118.235.156   <none>           9080/TCP        6m
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get svc
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get svc
NAME      TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
details   ClusterIP   34.118.231.187   <none>           9080/TCP        72m
kubernetes ClusterIP   34.118.224.1    <none>           443/TCP         78m
productpage LoadBalancer 34.118.228.10   34.83.115.232  9080:30749/TCP  72m
ratings    ClusterIP   34.118.228.169   <none>           9080:32025/TCP  72m
reviews    ClusterIP   34.118.235.156   <none>           9080/TCP        72m
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ ^C
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ 

```

```

Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl patch svc productpage -p '{"spec": {"type": "LoadBalancer"}}'
Patch failed: error: Unknown module: jdk.management.agent specified to --add-exports
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get svc
NAME      TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
details   ClusterIP   34.118.231.187   <none>           9080/TCP        2
kubernetes ClusterIP   34.118.224.1    <none>           443/TCP         10m
productpage LoadBalancer 34.118.228.10   34.83.115.232  9080:30749/TCP  11m
ratings    ClusterIP   34.118.228.169   <none>           9080:32025/TCP  18m
reviews    ClusterIP   34.118.235.156   <none>           9080/TCP        11m
Francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ 

```

The Comedy of Errors

Wikipedia Summary: The Comedy of Errors is one of William Shakespeare's early plays. It is his shortest and one of his most farcical comedies, with a major part of the humour coming from slapstick and mistaken identity, in addition to puns and word play.

ISBN-10	Publisher	Pages	Type	Language
1234567890	PublisherA	200	paperback	English

Book Reviews

Reviewer1 ★★★★☆
"An extremely entertaining play by Shakespeare. The slapstick humour is refreshing!"
Reviews served by: reviews-v3-77947c4c78-xj2l1j

Reviewer2 ★★★★★
"Absolutely fun and entertaining. The play lacks thematic depth when compared to other plays by Shakespeare."
Reviews served by: reviews-v3-77947c4c78-xj2l1j

Task 2: Build and deploy a new image to GKE

```
francisberi@berli:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/lab4/istio-master/samples/bookinfo$ kubectl apply -f platform/kube/bookinfo.yaml
service/details unchanged
serviceaccount/bookinfo-details unchanged
deployment.apps/details-v1 unchanged
service/ratings unchanged
serviceaccount/bookinfo-ratings unchanged
deployment.apps/ratings-v1 unchanged
service/reviews unchanged
serviceaccount/bookinfo-reviews unchanged
deployment.apps/reviews-v1 configured
deployment.apps/reviews-v2 unchanged
deployment.apps/reviews-v3 unchanged
service/productpage unchanged
serviceaccount/bookinfo-productpage unchanged
deployment.apps/productpage-v1 configured
francisberi@berli:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/lab4/istio-master/samples/bookinfo$ kubectl get pods
NAME           READY   STATUS    RESTARTS   AGE
details-v1-6cd69df6b-nqhd   1/1    Running   0          166m
productpage-v1-6f6ff77cd5-bpfjq  1/1    Running   0          166m
ratings-v1-79474af5fd-q46dn  1/1    Running   0          166m
reviews-v1-6789667f4-9vwc7   1/1    Running   0          166m
reviews-v2-86d5db4bde-955dj  1/1    Running   0          166m
reviews-v3-77947c4c78-xj2l1j  1/1    Running   0          166m
francisberi@berli:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ 
```

Kubernetes cluster to update the deployment with your new image:
You can describe the productpage deployment to ensure the image is being used:
This should show that the productpage service is now using the image from your Docker Hub repository.

```
Oct 10 02:02
Francisberi@berl:~/Desktop/CMU-Africa/Fall 2024/AIOps/aiopts/Lab4/istio-master/samples/bookinfo$ kubectl describe deployment productpage-v1
  reviews-v3-77947c4c78-xj2lj 4935d/5 1/1000 Oct 2024 23:12:01 -0700 16m
francisberi@berl:~/Desktop/CMU-Africa/Fall 2024/AIOps/aiopts/Lab4/istio-master/samples/bookinfo$ kubectl apply -f platform/kube/bookinfo.yaml
 5. Apply the Updated bookinfo.yaml
Annotations: deployment.kubernetes.io/revision: 2
Selector: app=productpage
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=productpage
version=v1
Annotations: prometheus.io/path: /metrics
prometheus.io/port: 9080
prometheus.io/scrape: true
Service Account: bookinfo-productpage
Containers:
productpage:
Image: docker.io/francisberi/bookinfo_hub:productpage-v1
Ports: 9080/TCP
Host Port: 0/TCP
Environment: <none>
Mounts:
Pre Mounts: /tmp from tmp (rw)
Volumes:
tmp:
  Type: EmptyDir (a temporary directory that shares a pod's lifetime)
  Medium:
  SizeLimit: <unset>
  Node-Selectors: <none>
  Tolerations: <none>
Conditions:
  Type: PodMatchFormula Status: Available Reason: MinimumReplicasAvailable
  Available: True Progressing: True NewReplicaSetAvailable
OldReplicaSets: productpage-v1-57ffb6658c (0/0 replicas created)
NewReplicaSet: productpage-v1-6f6ff77cd5 (1/1 replicas created)
Events:
  Type: Normal Reason: ScalingReplicaSet Age: 2m23s From: deployment-controller Message: Scaled up replica set productpage-v1-6f6ff77cd5 to 1
  Normal Reason: ScalingReplicaSet Age: 2m15s From: deployment-controller Message: Scaled down replica set productpage-v1-57ffb6658c to 0 from 1
Francisberi@berl:~/Desktop/CMU-Africa/Fall 2024/AIOps/aiopts/Lab4/istio-master/samples/bookinfo$
```

```
Oct 10 02:02
Francisberi@berl:~/Desktop/CMU-Africa/Fall 2024/AIOps/aiopts/Lab4/istio-master/samples/bookinfo$ kubectl describe deployment productpage-v1
  reviews-v3-77947c4c78-xj2lj 4935d/5 1/1000 Oct 2024 23:12:01 -0700 16m
francisberi@berl:~/Desktop/CMU-Africa/Fall 2024/AIOps/aiopts/Lab4/istio-master/samples/bookinfo$ kubectl apply -f platform/kube/bookinfo.yaml
 5. Apply the Updated bookinfo.yaml
Annotations: deployment.kubernetes.io/revision: 2
Selector: app=productpage
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=productpage
version=v1
Annotations: prometheus.io/path: /metrics
prometheus.io/port: 9080
prometheus.io/scrape: true
Service Account: bookinfo-productpage
Containers:
productpage:
Image: docker.io/francisberi/bookinfo_hub:productpage-v1
Port: 9080/TCP
Host Port: 0/TCP
Environment: <none>
Mounts:
Pre Mounts: /tmp from tmp (rw)
Volumes:
tmp:
  Type: EmptyDir (a temporary directory that shares a pod's lifetime)
  Medium:
  SizeLimit: <unset>
  Node-Selectors: <none>
  Tolerations: <none>
Conditions:
  Type: PodMatchFormula Status: Available Reason: MinimumReplicasAvailable
  Available: True Progressing: True NewReplicaSetAvailable
OldReplicaSets: productpage-v1-57ffb6658c (0/0 replicas created)
NewReplicaSet: productpage-v1-6f6ff77cd5 (1/1 replicas created)
Events:
  Type: Normal Reason: ScalingReplicaSet Age: 2m23s From: deployment-controller Message: Scaled up replica set productpage-v1-6f6ff77cd5 to 1
  Normal Reason: ScalingReplicaSet Age: 2m15s From: deployment-controller Message: Scaled down replica set productpage-v1-57ffb6658c to 0 from 1
Francisberi@berl:~/Desktop/CMU-Africa/Fall 2024/AIOps/aiopts/Lab4/istio-master/samples/bookinfo$
```

```

Oct 10 02:03
Francisberi@beri: ~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo

Namespace: default
CreationTimestamp: Wed, 09 Oct 2024 23:12:08 -0700
Labels:  CMU U... IEEE-Referenc... app=productpage
Annotations: version=v1 deployment.kubernetes.io/revision: 2
Selector: app=productpage,version=v1
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=productpage
  Annotations: prometheus.io/path: /metrics
    prometheus.io/port: 9080
    prometheus.io/scrape: true
  Service Account: bookinfo-productpage
  Containers:
    productpage:
      Image: docker.io/francisberi/bookinfo_hub:productpage-v1
      Port: 9080/TCP
      Host Port: 0/TCP
      Environment: <none>
      Mounts:
        /tmp from tmp (rw)
      Volumes:
        tmp:
          Type: EmptyDir (a temporary directory that shares a pod's lifetime)
          Medium: Add Prometheus monitoring and a Grafana panel to track requests to the Bookinfo ProductPage.
          SizeLimit: <unset>
  Node-Selectors: <none>
  Tolerations: <none>
  Conditions:
    Type Status Reason
    Available True MinimumReplicasAvailable
    Progressing True NewReplicaSetAvailable
    OldReplicaSets: productpage-v1-57ffb6658c (0/0 replicas created)
    NewReplicaSet: productpage-v1-6f6ff77cd5 (1/1 replicas created)
  Events:
    Type Reason Age From Message
    Normal ScalingReplicaSet 2m23s deployment-controller Scaled up replica set productpage-v1-6f6ff77cd5 to 1
    Normal ScalingReplicaSet 2m15s deployment-controller Scaled down replica set productpage-v1-57ffb6658c to 0 from 1

Francisberi@beri: ~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo $ 

```

Oct 10 02:03

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The Comedy of Errors

Wikipedia Summary: The Comedy of Errors is one of **William Shakespeare's** early plays. It is his shortest and one of his most farcical comedies, with a major part of the humour coming from slapstick and mistaken identity, in addition to puns and word play.

[Learn more about Istio →](#)

Book Details

ISBN-10	Publisher	Pages	Type	Language
1234567890	PublisherA	200	paperback	English

Book Reviews

★★★★★

"An extremely entertaining play by Shakespeare. The slapstick humour is refreshing!"

Reviewer1
Reviews served by: reviews-v2-86d5db4bd0-955dj

★★★★★

"Absolutely fun and entertaining. The play lacks thematic depth when compared to other plays by Shakespeare."

Reviewer2
Reviews served by: reviews-v2-86d5db4bd0-955dj

The Comedy of Errors

Wikipedia Summary: The Comedy of Errors is one of **William Shakespeare's** early plays. It is his shortest and one of his most farcical comedies, with a major part of the humour coming from slapstick and mistaken identity, in addition to puns and word play.

[Learn more about Istio](#)

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★★★★★ ★★★★☆

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Reviews served by: reviews-v2-86d5db4bd6-955dj

"Absolutely fun and entertaining. The play lacks thematic depth when compared to other plays by Shakespeare." Reviewer2
Reviews served by: reviews-v2-86d5db4bd6-955dj

```

Oct 10 01:37
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ docker image ls
REPOSITORY          TAG        IMAGE ID      CREATED             SIZE
Francisberi/bookinfo_hub/examples-bookinfo-reviews-v3    tagname   121a38e7d80f  10 minutes ago  708MB
Francisberi/bookinfo_hub/examples-bookinfo-reviews-v1    tagname   3a8135c9cf63  10 minutes ago  708MB
Francisberi/bookinfo_hub/examples-bookinfo-reviews-v2    tagname   855761f0ca5f  10 minutes ago  708MB
Francisberi/bookinfo_hub/examples-bookinfo-mongodb       tagname   941e9ad2af30  13 minutes ago  1.28GB
Francisberi/bookinfo_hub/examples-bookinfo-mysqldb       tagname   bfd8bb214ff  13 minutes ago  1.64GB
Francisberi/bookinfo_hub/examples-bookinfo-productpage-v1 tagname   5bbade00e127a  13 minutes ago  349MB
Francisberi/bookinfo_hub/examples-bookinfo-productpage-v1 tagname   6b7a9c05c00a  13 minutes ago  349MB
Francisberi/bookinfo_hub/examples-bookinfo-productpage-v-delayed tagname   1d9872146022  14 minutes ago  416MB
Francisberi/bookinfo_hub/examples-bookinfo-ratings-v2     tagname   9e44c95b774  14 minutes ago  416MB
Francisberi/bookinfo_hub/examples-bookinfo-ratings-v-unavailable tagname   c02c7928b643  14 minutes ago  416MB
Francisberi/bookinfo_hub/examples-bookinfo-ratings-v-faulty   tagname   38351c30f452  14 minutes ago  416MB
Francisberi/bookinfo_hub/examples-bookinfo-ratings-v1     tagname   f4b630f77671  14 minutes ago  416MB
Francisberi/bookinfo_hub/examples-bookinfo-ratings-v-unhealthy tagname   686671593cb  14 minutes ago  416MB
Francisberi/bookinfo_hub/examples-bookinfo-details-v2    tagname   8480c84af3d4  15 minutes ago  397MB
Francisberi/bookinfo_hub/examples-bookinfo-details-v1    tagname   192503d92502  15 minutes ago  397MB
prometheussandbox-model      latest   2e16034e6112  2 weeks ago   2.31GB
prometheussandbox_model      latest   5f3129d5738b  2 weeks ago   2.31GB
prometheussandbox_prometheus latest   0cd4fb738b13  2 weeks ago   264MB
prometheussandbox_prometheus latest   d5c45b72e24a  2 weeks ago   264MB
prometheussandbox_model_evaluation latest   784b57a9f022  2 weeks ago   2.03GB
prometheussandbox_grafana    latest   3d9602d4e999  2 weeks ago   635MB
prometheussandbox_grafana    latest   d43aac5f678b  2 weeks ago   635MB
prometheussandbox_grafana    latest   37df6759df5f  2 weeks ago   1.48GB
prometheussandbox_app_one    latest   d0386e0ddbb14  2 weeks ago   1.48GB
prometheussandbox_app_one    latest   bf0d235b6b6  2 weeks ago   22.7MB
prometheussandbox_app_two    latest   40c5a8018b21  2 weeks ago   22.7MB
prometheussandbox_app_two    latest   7a4d0696a24  2 weeks ago   38.6MB
mysql                         8.0     ccb8f749b5e  2 months ago  785MB
mysql                         latest   4032c6d5bfd7  2 months ago  38.2MB
mysql                         18-alpine 02376a266c84  3 months ago  182MB
mysql                         latest   d79336f4812b  21 months ago  73.9MB
postgres                      13.3   6647385dd9ae  3 years ago   454MB
postgres                      latest   54bd3ba6b39  3 years ago   131MB
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ docker tag examples-bookinfo-productpage-v1:latest francisberi/bookinfo_hub:latest
Error response from daemon: No such image: examples-bookinfo-productpage-v1:latest
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ docker tag francisberi/bookinfo_hub/examples-bookinfo-productpage-v1:tagname francisberi
Authenticating with existing credentials...
Login Succeeded
The push refers to repository [docker.io/francisberi/bookinfo_hub]
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ docker push francisberi/bookinfo_hub:productpage-v1
Source: Dev Containers Reopen in Container Don't show Again.

```

```

Oct 10 01:39
Francisberi@berti:~/Desktop/CMU-Africa/Fall 2024/AIOPs/alops/Lab4/istio-master/samples/bookinfo$ docker tag examples-bookinfo-productpage-v1:latest francisberi/bookinfo_hub:latest
Francisberi@berti:~/Desktop/CMU-Africa/Fall 2024/AIOPs/alops/Lab4/istio-master/samples/bookinfo$ docker tag francisberi/bookinfo_hub:examples-bookinfo-productpage-v1:tagname francisberi
Authenticating with existing credentials...
Login Succeeded
Francisberi@berti:~/Desktop/CMU-Africa/Fall 2024/AIOPs/alops/Lab4/istio-master/samples/bookinfo$ docker push francisberi/bookinfo_hub:productpage-v1
The push refers to repository [docker.io/francisberi/bookinfo_hub]
6df72f0047e3: Pushed
ff75926ee476: Pushed
7c22843bbe69: Pushed
507107eb7a49: Pushed
c9801e2b7104: Pushed
4f4fd700ef54: Mounted from prom/pushgateway
12e090154669: Pushed
000debf1f78a: Pushed
4b48bcdd53d: Pushed
ee7e1573fb5f: Pushed
cac86aaabe192: Pushed
ff94763c510: Pushed
dc576a712a7d: Pushed
2d97e33e93e: Pushed
0b54edf0a6e2: Pushed
31659a00cb45: Pushed
b5c93a5953e4: Pushed
a3ea5ee66fe0: Pushed
022edbc22fa9: Pushed
921b455881d9: Pushed
Fee90d398fd4: Pushed
14b22557ab71: Pushed
25d3892798f8: Pushed
F230338da7b9: Pushed
6b84ea107ce: Pushed
c57ee5000dd1: Pushed
bee0f2e005f57: Pushed
ded1565ecf28: Pushed
119d67e6156b: Pushed
ca08ba7f1086: Pushed
ed36f7295eac: Pushed
productpage-v1: digest: sha256:fbbae0be127ed06a4483dbc4c1f61a32be2c6005cb2ed82fc2afcf5fed054437 size: 1609
Francisberi@berti:~/Desktop/CMU-Africa/Fall 2024/AIOPs/alops/Lab4/istio-master/samples/bookinfo$ 

```

Please sign in to start using Tabnine

Source: Tabnine AI / Sign in

A git repository was found in the parent folder(s) of the workspace or the open file(s). Would you like to open the repository?

Source: GitHub / Yes / Always / Never

Folder contains a Dev Container configuration file. Reopen folder to develop in a container (learn more).

Source: Dev Containers / Reopen in Container / Don't Show Again

Oct 10 01:40

hub.docker.com/repository/docker/francisberi/bookinfo_hub/general

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dockerhub Explore Repositories Organizations Usage Search Docker Hub

francisberi / Repositories / bookinfo_hub / General

General Tags Builds Collaborators Webhooks Settings

francisberi/bookinfo_hub ⓘ

Last pushed 2 minutes ago

This repository does not have a description ⓘ INCOMPLETE

This repository does not have a category ⓘ INCOMPLETE

Docker commands

To push a new tag to this repository:

docker push francisberi/bookinfo_hub:tagname

Tags

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
productpage-v1	Linux	Image	a minute ago	2 minutes ago

See all

Repository overview ⓘ INCOMPLETE

An overview describes what your image does and how to run it. It displays in the public view of your repository once you have pushed some content.

Add overview

Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Available with Pro, Team and Business subscriptions. Read more about automated builds ⌂.

Upgrade

The screenshot shows a Docker Hub repository page for `francisberi/bookinfo_hub/general`. The repository has no description or category. It contains one tag, `productpage-v1`, which is an image type pulled a minute ago and pushed 2 minutes ago. There are options for Docker commands and automated builds.

```

francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl apply -f platform/kube/bookinfo.yaml
Kubernetes cluster to update the deployment with your new image.

batch
[kubectl apply -f platform/kube/bookinfo.yaml] Copy code

6. Verify the Update
You can check the pods to ensure they're using the new image:
batch
[kubectl get pods] Copy code

This should show that the productpage service is now using the image from your Docker Hub repository.

I prefer this response
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
details-v1   1/1     Running   0          166m
productpage-v1   1/1     Running   0          166m
reviews-v1    1/1     Running   0          166m
reviews-v2    1/1     Running   0          166m
reviews-v3    1/1     Running   0          166m
francisberi@beri:~/Desktop/CMU-Africa/Fall 2024/AIOPs/aiops/Lab4/istio-master/samples/bookinfo$ 
  
```

Task 3: Monitor GKE with Prometheus/Grafana

Oct 10 03:11

localhost:9090/targets

Prometheus Targets

Targets

All Unhealthy Collapse All

app_one (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://app_one:8000/metrics	UP	instance="app_one:8000" job="app_one"	1.914s ago	7.861ms	

bookinfo (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://34.83.115.232:9080/metrics	UP	instance="34.83.115.232:9080" job="bookinfo"	2.53s ago	84.108ms	

model (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://model:8000/metrics	UP	instance="model:8000" job="model"	2.819s ago	5.059ms	

node_exporter (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://node_exporter:9100/metrics	UP	instance="node_exporter:9100" job="node_exporter"	1.690s ago	27.712ms	

postgres_exporter (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://postgres_exporter:9187/metrics	UP	instance="postgres_exporter:9187" job="postgres_exporter"	984.000ms ago	35.767ms	

push_gateway (1/1 up) show less

