# Lab 4

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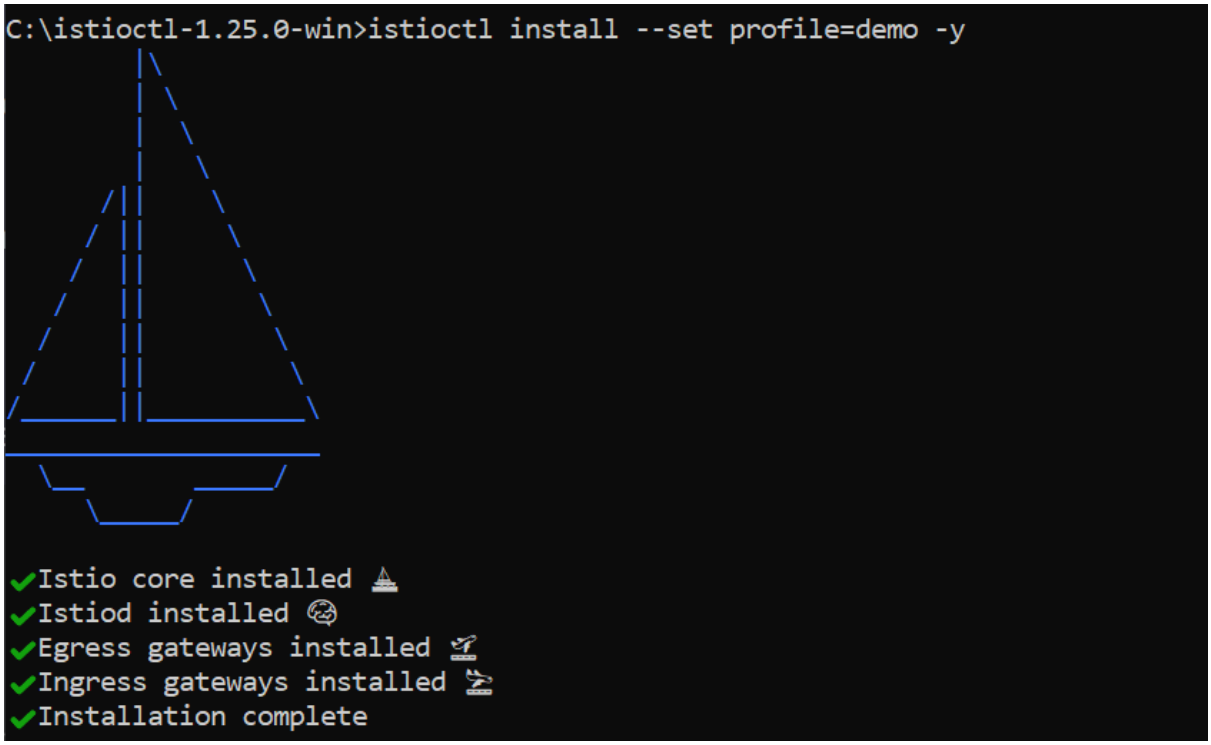
## Install Istio on Kubernetes cluster:




## Deploy the bookinfo sample application:

**Apply the Kubernetes resources defined in the bookinfo.yaml:**

```
C:\istioctl-1.25.0-win>kubectl apply -f samples/bookinfo/platform/kube/bookinfo.yaml
service/details created
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
```

```
C:\istioctl-1.25.0-win> kubectl get services
NAME                    TYPE           CLUSTER-IP       EXTERNAL-IP   PORT(S)                        AGE
bookinfo-gateway-istio  LoadBalancer   10.99.168.12     <pending>     15021:32262/TCP,80:30324/TCP   4m3s
details                 ClusterIP      10.110.215.133   <none>        9080/TCP                       89s
kubernetes              ClusterIP      10.96.0.1        <none>        443/TCP                        13m
productpage             ClusterIP      10.108.156.42    <none>        9080/TCP                       88s
ratings                 ClusterIP      10.97.10.126     <none>        9080/TCP                       89s
reviews                 ClusterIP      10.111.28.177    <none>        9080/TCP                       89s
```

```
C:\istioctl-1.25.0-win>kubectl get pods
NAME                                     READY   STATUS    RESTARTS   AGE
bookinfo-gateway-istio-59667fbf6b-d5vm2  1/1     Running   0          4m32s
details-v1-54ffdd5947-xbtmw              1/1     Running   0          118s
productpage-v1-d49bb79b4-9pvcj           1/1     Running   0          117s
ratings-v1-856f65bcff-l5n7s              1/1     Running   0          118s
reviews-v1-848b8749df-958bq              1/1     Running   0          118s
reviews-v2-5fdf9886c7-znml6              1/1     Running   0          118s
reviews-v3-bb6b8ddc7-fnj98               1/1     Running   0          117s
```

**Configure the Gateway to use a ClusterIP:**

```
C:\istioctl-1.25.0-win>kubectl annotate gateway bookinfo-gateway networking.istio.io/service-type=ClusterIP -n default
gateway.gateway.networking.k8s.io/bookinfo-gateway annotated
```

**Verify the Gateway Service:**

```
C:\istioctl-1.25.0-win>kubectl get svc bookinfo-gateway-istio
NAME                    TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)            AGE
bookinfo-gateway-istio  ClusterIP   10.99.168.12   <none>        15021/TCP,80/TCP   8m12s
```

**Check the Ingress Gateway Pod:**

```
C:\istioctl-1.25.0-win>kubectl get pods -n istio-system -l app=istio-ingressgateway
NAME                                    READY   STATUS    RESTARTS   AGE
istio-ingressgateway-595845f8bf-bbx7r   1/1     Running   0          17m
```

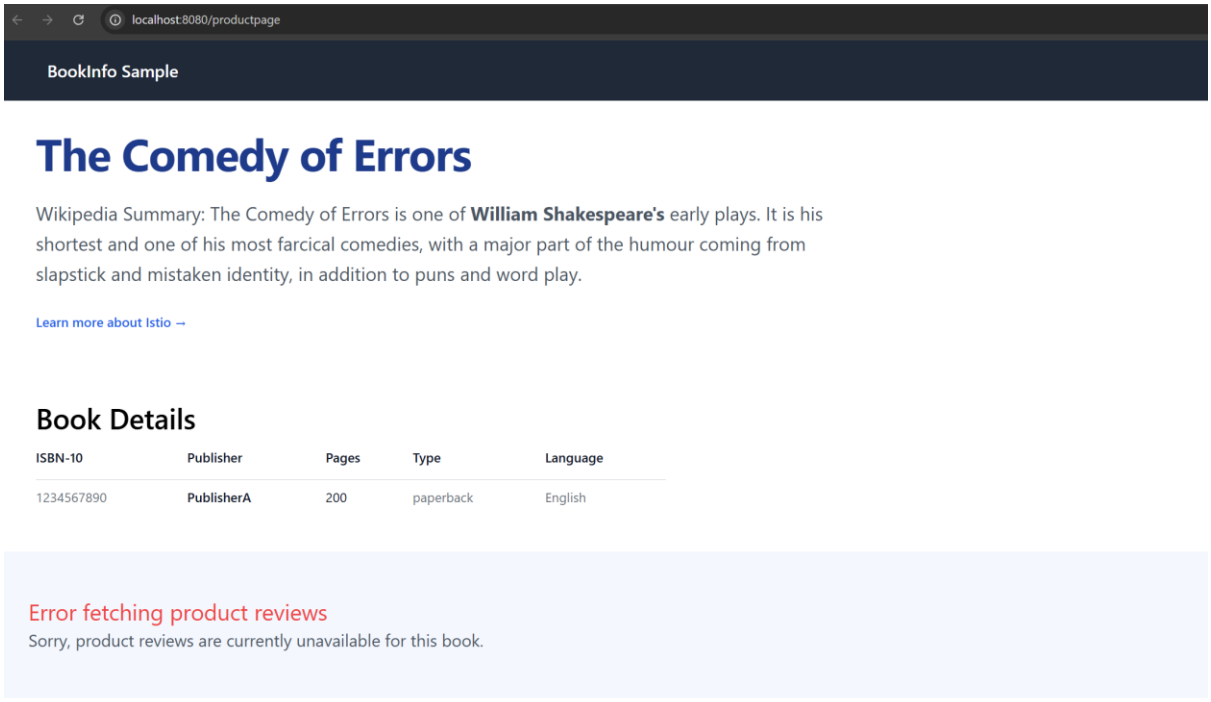
**Check Endpoints for the Gateway Service:**

```
C:\istioctl-1.25.0-win>kubectl get endpoints bookinfo-gateway-istio
NAME                     ENDPOINTS                                AGE
bookinfo-gateway-istio   10.244.0.13:15021,10.244.0.13:80   9m12s
```

**Port-Forward the Gateway Service to access BookInfo application:**

```
C:\istioctl-1.25.0-win>kubectl port-forward svc/bookinfo-gateway-istio 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
```

**Accessing the page:**




## View the Dashboard

**Deploy the Istio addons:**

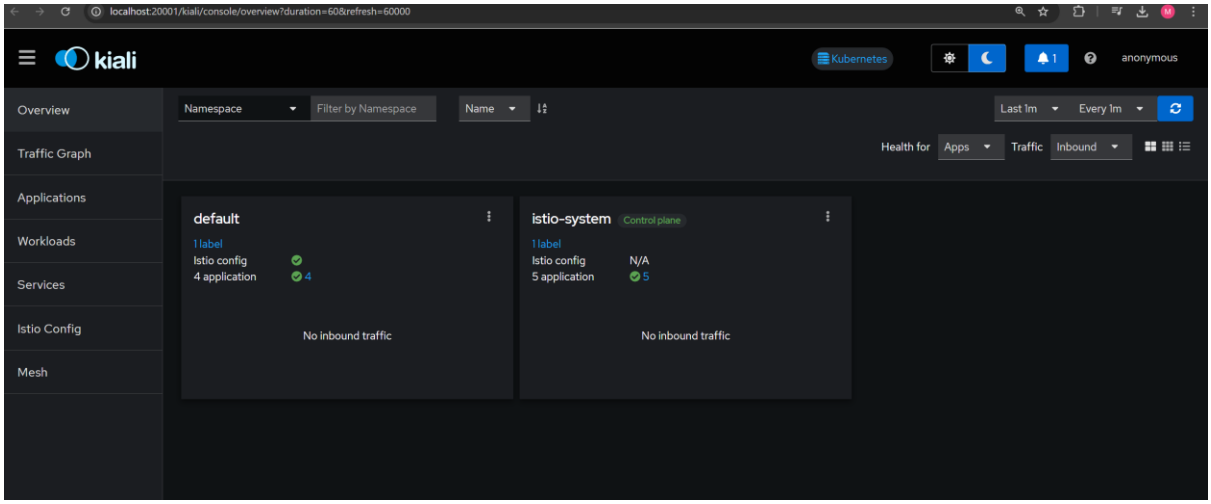
```
C:\istioctl-1.25.0-win>kubectl apply -f samples/addons
serviceaccount/grafana created
configmap/grafana created
service/grafana created
deployment.apps/grafana created
configmap/istio-grafana-dashboards created
configmap/istio-services-grafana-dashboards created
deployment.apps/jaeger created
service/tracing created
service/zipkin created
service/jaeger-collector created
serviceaccount/kiali created
configmap/kiali created
clusterrole.rbac.authorization.k8s.io/kiali created
clusterrolebinding.rbac.authorization.k8s.io/kiali created
service/kiali created
deployment.apps/kiali created
serviceaccount/loki created
configmap/loki created
configmap/loki-runtime created
clusterrole.rbac.authorization.k8s.io/loki-clusterrole created
clusterrolebinding.rbac.authorization.k8s.io/loki-clusterrolebinding cre
```

**Check the deployment status of Kiali:**

```
C:\istioctl-1.25.0-win>kubectl rollout status deployment/kiali -n istio-system
Waiting for deployment "kiali" rollout to finish: 0 of 1 updated replicas are available...
deployment "kiali" successfully rolled out
```

**Access the Kiali Dashboard:**

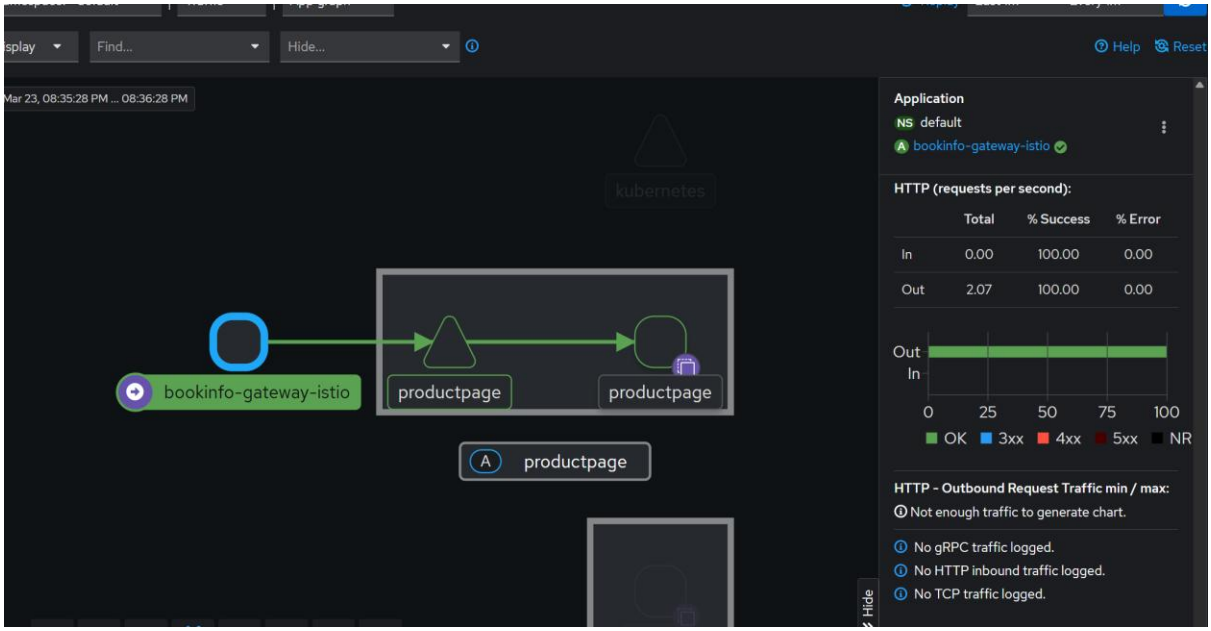
```
C:\istioctl-1.25.0-win>istioctl dashboard kiali
http://localhost:20001/kiali
```



**Send one hundred requests**:

```
C:\Users\Mirella>for /l %i in (1,1,100) do curl -s -o NUL "http://localhost:8080/productpage"

C:\Users\Mirella>curl -s -o NUL "http://localhost:8080/productpage"

C:\Users\Mirella>curl -s -o NUL "http://localhost:8080/productpage"
```

**An overview of mesh with the relationships between the services in the Bookinfo sample application:**