

Lab 4 Istio

1. Download Istio

Download Istio and set it up.

```
gabor@fedora:~/Downloads$ curl -L https://istio.io/downloadIstio | sh -
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left     Speed
100 101 100 101 0 0 295 0 --:--:-- --:--:-- --:--:-- 294
100 5124 100 5124 0 0 6922 0 --:--:-- --:--:-- --:--:-- 6922

Downloading istio-1.25.0 from https://github.com/istio/istio/releases/download/1.25.0/istio-1.25.0-linux-amd64.tar.gz ...

Istio 1.25.0 download complete!

The Istio release archive has been downloaded to the istio-1.25.0 directory.

To configure the istioctl client tool for your workstation,
add the /home/gabor/Downloads/istio-1.25.0/bin directory to your environment path variable with:
    export PATH="$PATH:/home/gabor/Downloads/istio-1.25.0/bin"

Begin the Istio pre-installation check by running:
    istioctl x precheck

Try Istio in ambient mode
    https://istio.io/latest/docs/ambient/getting-started/
Try Istio in sidecar mode
    https://istio.io/latest/docs/setup/getting-started/
Install guides for ambient mode
    https://istio.io/latest/docs/ambient/install/
Install guides for sidecar mode
    https://istio.io/latest/docs/setup/install/

Need more information? Visit https://istio.io/latest/docs/
gabor@fedora:~/Downloads$ cd istio-1.25.0/
```

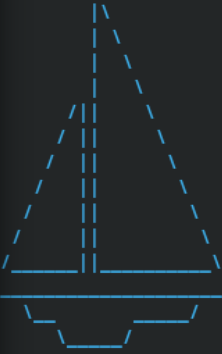
2. Install Istio & Kubernetes Gateway

Install demo profile.

```

gabor@fedora:~/Downloads/istio-1.25.0$ ./bin/istioctl install -f samples/bookinfo/demo-profile-no-gateways.yaml -y

```



```

✓ Istio core installed 🚀
✓ Istiod installed 🟢
✓ Installation complete
gabor@fedora:~/Downloads/istio-1.25.0$ kubectl label namespace default istio-injection=enabled
namespace/default labeled
gabor@fedora:~/Downloads/istio-1.25.0$ kubectl get crd gateways.gateway.networking.k8s.io &> /dev/null || \
{ kubectl kustomize "github.com/kubernetes-sigs/gateway-api/config/crd?ref=v1.2.1" | kubectl apply -f -; }
customresourcedefinition.apiextensions.k8s.io/gatewayclasses.gateway.networking.k8s.io created
customresourcedefinition.apiextensions.k8s.io/gateways.gateway.networking.k8s.io created
customresourcedefinition.apiextensions.k8s.io/grpcroutes.gateway.networking.k8s.io created
customresourcedefinition.apiextensions.k8s.io/httproutes.gateway.networking.k8s.io created
customresourcedefinition.apiextensions.k8s.io/referencegrants.gateway.networking.k8s.io created

```

3. Deploy Sample Application

Deploy the Bookinfo sample application.

```

gabor@fedora:~/Downloads/istio-1.25.0$ 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
gabor@fedora:~/Downloads/istio-1.25.0$ kubectl get services

```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
details	ClusterIP	10.99.193.62	<none>	9080/TCP	5s
kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	11d
productpage	ClusterIP	10.109.29.105	<none>	9080/TCP	5s
ratings	ClusterIP	10.110.49.157	<none>	9080/TCP	5s
reviews	ClusterIP	10.96.5.115	<none>	9080/TCP	5s

```

gabor@fedora:~/Downloads/istio-1.25.0$ kubectl get pods

```

NAME	READY	STATUS	RESTARTS	AGE
details-v1-54ffdd5947-rmpvt	2/2	Running	0	6m35s
productpage-v1-d49bb79b4-bprh4	2/2	Running	0	6m35s
ratings-v1-856f65bcff-nbvtz	2/2	Running	0	6m35s
reviews-v1-848b8749df-9ljff	2/2	Running	0	6m35s
reviews-v2-5fdf9886c7-tk8ng	2/2	Running	0	6m35s
reviews-v3-bb6b8ddc7-hn9wk	2/2	Running	0	6m35s

```

gabor@fedora:~/Downloads/istio-1.25.0$ kubectl exec "$(kubectl get pod -l app=ratings -o jsonpath='{.items[0].metadata.name}')" -c ratings -- curl -sS productpage:9080/productpage | grep -o "<title>.*</title>"
<title>Simple Bookstore App</title>

```

4. Open the Application to Outside Traffic

Make the application available to outside machines.

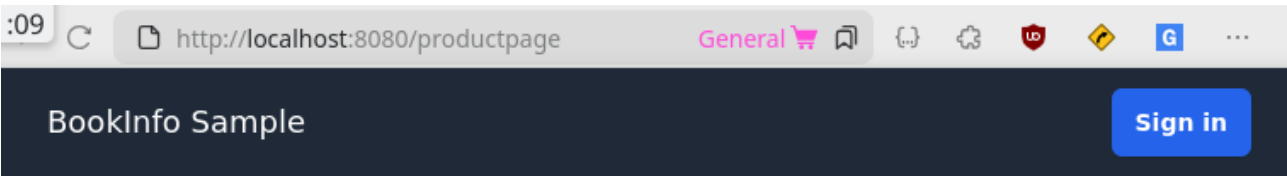
```
gabor@fedora:~/Downloads/istio-1.25.0$ kubectl apply -f samples/bookinfo/gateway-api/bookinfo-gateway.yaml
gateway.gateway.networking.k8s.io/bookinfo-gateway created
httproute.gateway.networking.k8s.io/bookinfo created
gabor@fedora:~/Downloads/istio-1.25.0$ kubectl annotate gateway bookinfo-gateway networking.istio.io/service-type=
ClusterIP --namespace=default
gateway.gateway.networking.k8s.io/bookinfo-gateway annotated
gabor@fedora:~/Downloads/istio-1.25.0$ kubectl get gateway
```

NAME	CLASS	ADDRESS	PROGRAMMED	AGE
bookinfo-gateway	istio	bookinfo-gateway-istio.default.svc.cluster.local	True	19s

5. Access Application

Port-forward the application and access it.

```
gabor@fedora:~/Downloads/istio-1.25.0$ 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
```



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

★★★★☆

"Absolutely fun and entertaining. The play lacks thematic depth when compared to

6. Access the Dashboard

Deploy the telemetry and look at dashboard.

```
gabor@fedora:~/Downloads/istio-1.25.0$ kubectl apply -f samples/addons
kubectl rollout status deployment/kiali -n istio-system
serviceaccount/grafana unchanged
configmap/grafana unchanged
service/grafana unchanged
deployment.apps/grafana configured
configmap/istio-grafana-dashboards configured
configmap/istio-services-grafana-dashboards configured
deployment.apps/jaeger unchanged
service/tracing unchanged
service/zipkin unchanged
service/jaeger-collector unchanged
serviceaccount/kiali unchanged
configmap/kiali unchanged
clusterrole.rbac.authorization.k8s.io/kiali unchanged
clusterrolebinding.rbac.authorization.k8s.io/kiali unchanged
service/kiali unchanged
deployment.apps/kiali unchanged
serviceaccount/loki unchanged
configmap/loki unchanged
configmap/loki-runtime unchanged
clusterrole.rbac.authorization.k8s.io/loki-clusterrole unchanged
clusterrolebinding.rbac.authorization.k8s.io/loki-clusterrolebinding unchanged
service/loki-memberlist unchanged
service/loki-headless unchanged
service/loki unchanged
statefulset.apps/loki configured
serviceaccount/prometheus unchanged
configmap/prometheus unchanged
clusterrole.rbac.authorization.k8s.io/prometheus unchanged
clusterrolebinding.rbac.authorization.k8s.io/prometheus unchanged
service/prometheus unchanged
deployment.apps/prometheus configured
Waiting for deployment "kiali" rollout to finish: 0 of 1 updated replicas are available...
```

← → C http://localhost:20001/kiali/console/mesh?duration=60&refresh=60000&meshLayout=kiali-dagre

General

kiali

Kubernetes

Display Find... Hide...

Help Res

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```
graph TD; Kiali[KI kiali] --- Prometheus[MS Prometheus]; Kiali --- Grafana[GR Grafana]; Kiali --- Istiod[IS istiod Tag: default]; Kiali --- DP[DP Data Plane 1 Namespaces];
```

NS istio-system

C Kubernetes

Mesh: cluster.local

Clusters: 1

- Kubernetes
kubernetes version: v1.32.0

ControlPlanes: 1

- istiod ✓
version: 1.25.0
revision: default
dataplane namespaces: 1

Kiali: 1

- kiali ✓
version: v2.5.0

Observability: 2

- Grafana ✓
version: 11.3.1
- Prometheus ✓
version: 3.1.0

Hide