

Lab 5 - Istio

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1. Download Istio & install 'demo' profile

```
PS C:\Users\Darigan\Projects\cloud\istio-1.21.2-win\istio-1.21.2\bin> istioctl install --set profile=demo -y
✓Istio core installed
✓Istiod installed
✓Egress gateways installed
✓Ingress gateways installed
✓Installation complete
ade this installation the default for injection and validation.
PS C:\Users\Darigan\Projects\cloud\istio-1.21.2-win\istio-1.21.2\bin> |
```

2. Add a namespaced label

```
PS C:\Users\Darigan\Projects\cloud\istio-1.21.2-win\istio-1.21.2\bin> kubectl label namespace default istio-injection=enabled
namespace/default labeled
```

3.

3.1. Deploy sample 'bookinfo' app

```
Mode                LastWriteTime         Length Name
----                -
d-----          04/05/2024         19:24      bin
d-----          04/05/2024         19:24    manifests
d-----          04/05/2024         19:24    samples
d-----          04/05/2024         19:24     tools
-a-----          04/05/2024         11357 LICENSE
-a-----          04/05/2024          956 manifest.yaml
-a-----          04/05/2024          6615 README.md

PS C:\Users\Darigan\Projects\cloud\istio-1.21.2-win\istio-1.21.2> 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
```

3.2. Check pods & services

```
PS C:\Users\Darigan\Projects\cloud\istio-1.21.2-win\istio-1.21.2> kubectl get services
NAME      TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)        AGE
details   ClusterIP   10.108.52.47   <none>         9080/TCP       2m38s
kubernetes ClusterIP   10.96.0.1      <none>         443/TCP        10m
productpage ClusterIP   10.111.230.107 <none>         9080/TCP       2m38s
ratings   ClusterIP   10.105.18.201  <none>         9080/TCP       2m38s
reviews   ClusterIP   10.102.223.96  <none>         9080/TCP       2m38s
PS C:\Users\Darigan\Projects\cloud\istio-1.21.2-win\istio-1.21.2> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
details-v1-cdd874bc9-vrxxf          2/2     Running   0          2m42s
productpage-v1-5bb9985d4d-kpt2n     2/2     Running   0          2m42s
ratings-v1-6484d64bbc-x2d24         2/2     Running   0          2m42s
reviews-v1-598f9b58fc-mrbd1         2/2     Running   0          2m42s
reviews-v2-5979c6fc9c-v5hzv         2/2     Running   0          2m42s
reviews-v3-7bbb5b9cf7-qc8qz         2/2     Running   0          2m42s
PS C:\Users\Darigan\Projects\cloud\istio-1.21.2-win\istio-1.21.2> |
```

3.3 Verify deployment

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2/bin
$ kubectl exec "$(kubectl get pod -l app=ratings -o jsonpath='{.items[0].metadata.name}')" -c ratings -- curl -sS produc
tpage:9080/productpage | grep -o "<title>.*</title>"
<title>Simple Bookstore App</title>
```

4. Open application to outside traffic

4.1. Associate application with gateway

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ kubectl apply -f samples/bookinfo/networking/bookinfo-gateway.yaml
gateway.networking.istio.io/bookinfo-gateway created
virtualservice.networking.istio.io/bookinfo created
```

- 4.2. Ensure there are no issues with configuration

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ istioctl analyze

✔No validation issues found when analyzing namespace: default.
```

5. Determine the ingress and IP ports

- 5.1. Start minikube tunnel

```
Darigan@Cocoon MINGW64 ~
$ minikube tunnel
W0504 19:55:26.271433 17828 main.go:291] Unable to resolve the current Docker CLI context "default": context "default"
: context not found: open C:\Users\Darigan\.docker\contexts\meta\37a8ee1ce19687d132fe29851dca629d164e2c4958ba141d5f4133
a33f0688f\meta.json: The system cannot find the path specified.
✔ Tunnel successfully started

✖ NOTE: Please do not close this terminal as this process must stay alive for the tunnel to be accessible ...

! Access to ports below 1024 may fail on Windows with OpenSSH clients older than v8.1. For more information, see: http
s://minikube.sigs.k8s.io/docs/handbook/accessing/#access-to-ports-1024-on-windows-requires-root-permission
✖ Starting tunnel for service istio-ingressgateway.
```

- 5.2. Set the ingress host & ports

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ export INGRESS_HOST=$(kubectl -n istio-system get service istio-ingressgateway -o jsonpath='{.status.loadBalancer.ingr
ess[0].ip}')
$ export INGRESS_PORT=$(kubectl -n istio-system get service istio-ingressgateway -o jsonpath='{.spec.ports[?(@.name=="http
2")].port}')
$ export SECURE_INGRESS_PORT=$(kubectl -n istio-system get service istio-ingressgateway -o jsonpath='{.spec.ports[?(@.name
=="https")].port}')

Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ |
```

- 5.3. Ensure environment variables are correct

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ echo "$INGRESS_HOST"
127.0.0.1

Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ echo "$INGRESS_PORT"
80

Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ echo "$SECURE_INGRESS_PORT"
443

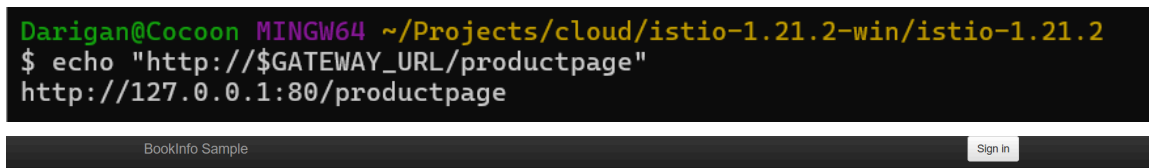
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ |
```

6. Set & verify gateway url

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ export GATEWAY_URL=$INGRESS_HOST:$INGRESS_PORT

Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ echo "$GATEWAY_URL"
127.0.0.1:80
```

- 7.
8. Confirm external access



The Comedy of Errors

Summary: [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.

Book Details

Type:
paperback
Pages:
200
Publisher:
PublisherA
Language:
English
ISBN-10:
1234567890
ISBN-13:
123-1234567890

Book Reviews

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

— Reviewer1

★★★★★

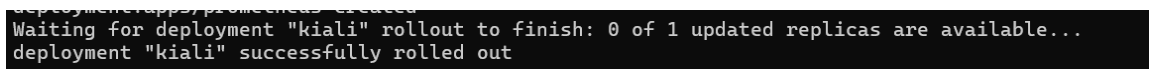
Absolutely fun and entertaining. The play lacks thematic depth when compared to other plays by Shakespeare.

— Reviewer2

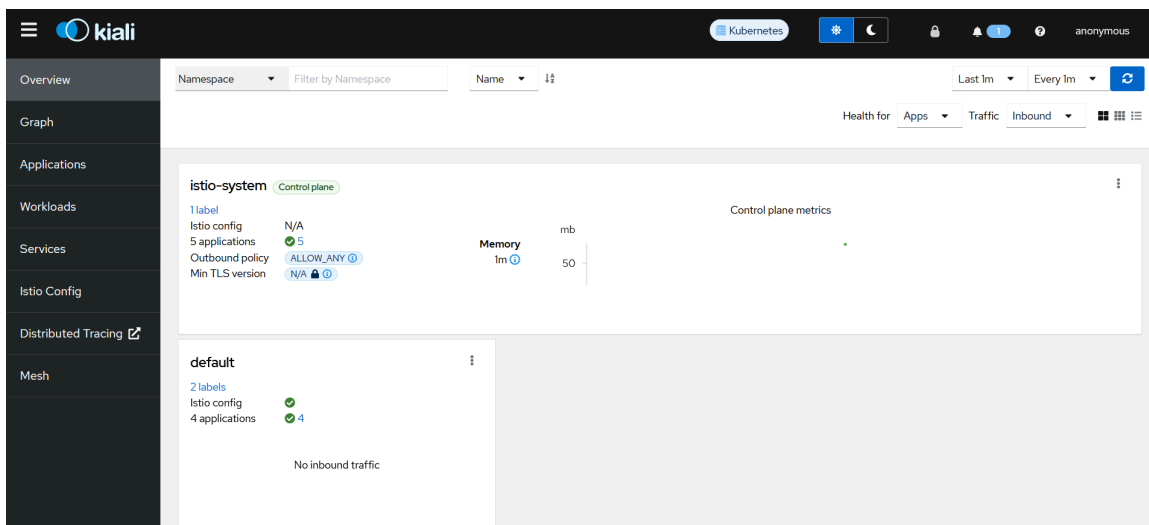
★★★★☆

Reviews served by:
[reviews-v3-7bbb5b9cf7-qc8gz](#)

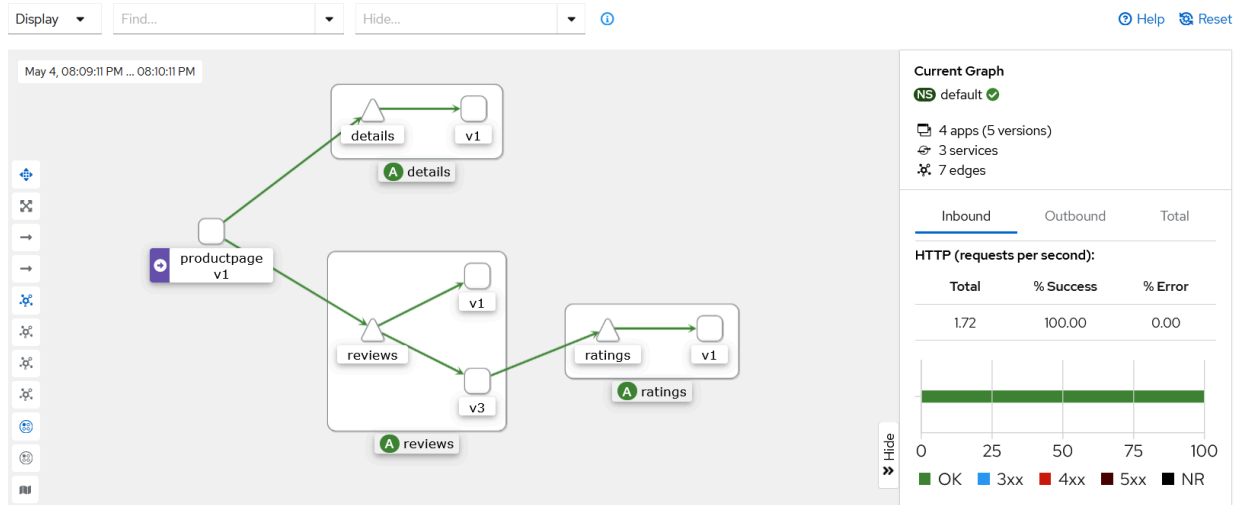
9. Install Kiali & other addons



10. Access the Kiali dashboard



11. View trace data



12. Delete sample

```
Removed CustomResourceDefinition::telemetries.telemetry.istio.io.
Removed CustomResourceDefinition::virtualservices.networking.istio.io.
Removed CustomResourceDefinition::wasmpugins.extensions.istio.io.
Removed CustomResourceDefinition::workloadentries.networking.istio.io.
Removed CustomResourceDefinition::workloadgroups.networking.istio.io.
✓Uninstall complete
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ |
```

13. Delete namespace

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ kubectl delete namespace istio-system
namespace "istio-system" deleted
```

14. Remove label

```
Darigan@Cocoon MINGW64 ~/Projects/cloud/istio-1.21.2-win/istio-1.21.2
$ kubectl label namespace default istio-injection-
namespace/default unlabeled
```