Cloud Lab 5

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Task 1 – Traffic Shifting

Apply Initial Routing (All traffic to v1):

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-all-v1.yaml
virtualservice.networking.istio.io/productpage created
virtualservice.networking.istio.io/reviews created
virtualservice.networking.istio.io/ratings created
virtualservice.networking.istio.io/details created
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Shift 50% Traffic to v3:

```
virtualservice.networking.istio.io/details created
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-reviews-50-v3.yaml
virtualservice.networking.istio.io/reviews configured
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Confirm VirtualService Weights:

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl get virtualservice reviews -o yaml
apiVersion: networking.istio.io/v1
kind: VirtualService
metadata:
  annotations:
    kubectl.kubernetes.io/last-applied-configuration: |
      {"apiVersion":"networking.istio.io/v1","kind":"VirtualService","metadata":{"annotations":{},"name":"reviews","namespace":"default"},"spec":{"hosts":["reviews"],"http":[{"rout
e":[{"destination":{"host":"reviews","subset":"v1"},"weight":50},{"destination":{"host":"reviews","subset":"v3"},"weight":50}]}]}}
  creationTimestamp: "2025-03-26T14:36:35Z"
  generation: 2
  name: reviews
  namespace: default
  resourceVersion: "8202"
  uid: bd69da8b-0f4d-4cd6-8de7-ad9f7ff87de6
spec:
  hosts:
  - reviews
  http:
  - route:
    - destination:
        host: reviews
        subset: v1
      weight: 50
    - destination:
        host: reviews
        subset: v3
      weight: 50
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Shift 100% Traffic to v3:

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-reviews-v3.yaml
virtualservice.networking.istio.io/reviews configured
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Clean up

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl delete -f samples/bookinfo/networking/virtual-service-all-v1.yaml
virtualservice.networking.istio.io "productpage" deleted
virtualservice.networking.istio.io "reviews" deleted
virtualservice.networking.istio.io "ratings" deleted
virtualservice.networking.istio.io "details" deleted
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Task 2: Request Routing.

Apply Initial v1 Routing Rules:

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-all-v1.yaml
virtualservice.networking.istio.io/productpage created
virtualservice.networking.istio.io/reviews created
virtualservice.networking.istio.io/ratings created
virtualservice.networking.istio.io/details created
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Verify Virtual Services

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl get virtualservices -o yaml
apiVersion: v1
items:
- apiVersion: networking.istio.io/v1
  kind: VirtualService
  metadata:
    annotations:
      kubectl.kubernetes.io/last-applied-configuration: |
        {"apiVersion":"networking.istio.io/v1","kind":"VirtualService","metadata":{"annotations":{},"name":"details","namespace":"default"},"spec":{"hosts":["details"],"http":[{"route":[{"destination":{"host":"details","subset":"v1"}}]}]}}
    creationTimestamp: "2025-03-26T14:43:18Z"
    generation: 1
    name: details
    namespace: default
    resourceVersion: "8900"
    uid: 43f1b7e4-95dc-437e-974c-f55e91668627
  spec:
    hosts:
    - details
    http:
    - route:
      - destination:
          host: details
          subset: v1
- apiVersion: networking.istio.io/v1
  kind: VirtualService
  metadata:
    annotations:
      kubectl.kubernetes.io/last-applied-configuration: |
        {"apiVersion":"networking.istio.io/v1","kind":"VirtualService","metadata":{"annotations":{},"name":"productpage","namespace":"default"},"spec":{"hosts":["productpage"],"http":[{"route":[{"destination":{"host":"productpage","subset":"v1"}}]}]}}
    creationTimestamp: "2025-03-26T14:43:18Z"
    generation: 1
    name: productpage
    namespace: default
    resourceVersion: "8897"
    uid: 577cf4a1-0efb-4d8f-892b-63b215316d51
  spec:
    hosts:
    - productpage
    http:
    - route:
      - destination:
          host: productpage
          subset: v1
- apiVersion: networking.istio.io/v1
  kind: VirtualService
  metadata:
    annotations:
      kubectl.kubernetes.io/last-applied-configuration: |
        {"apiVersion":"networking.istio.io/v1","kind":"VirtualService","metadata":{"annotations":{},"name":"ratings","namespace":"default"},"spec":{"hosts":["ratings"],"http":[{"route":[{"destination":{"host":"ratings","subset":"v1"}}]}]}}
    creationTimestamp: "2025-03-26T14:43:18Z"
    generation: 1
    name: ratings
    namespace: default
    resourceVersion: "8899"
    uid: eb9b9165-7ad1-4227-885f-142e706361c3
  spec:
    hosts:
    - ratings
    http:
    - route:
      - destination:
          host: ratings
          subset: v1
- apiVersion: networking.istio.io/v1
  kind: VirtualService
  metadata:
    annotations:
      kubectl.kubernetes.io/last-applied-configuration: |
        {"apiVersion":"networking.istio.io/v1","kind":"VirtualService","metadata":{"annotations":{},"name":"reviews","namespace":"default"},"spec":{"hosts":["reviews"],"http":[{"route":[{"destination":{"host":"reviews","subset":"v1"}}]}]}}
    creationTimestamp: "2025-03-26T14:43:18Z"
    generation: 1
    name: reviews
    namespace: default
    resourceVersion: "8898"
    uid: 858f7368-4686-48e7-a43f-d4f646fcff20
  spec:
    hosts:
    - reviews
    http:
    - route:
      - destination:
          host: reviews
          subset: v1
kind: List
metadata:
  resourceVersion: ""
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Apply User-Based Routing Rule:

```
          subset: v1
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-reviews-test-v2.yaml
virtualservice.networking.istio.io/reviews configured
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Logged in – black stars

jason
Sign out

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-v2-65cb66b45c-r546x

★ ★ ★ ★ ☆

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

Reviewer2
Reviews served by: reviews-v2-65cb66b45c-r546x

Signed out

Sign in

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-v1-5c4d6d447c-q76f2

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

Reviewer2
Reviews served by: reviews-v1-5c4d6d447c-q76f2

Cleanup

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl delete -f samples/bookinfo/networking/virtual-service-all-v1.yaml
Error from server (NotFound): error when deleting "samples/bookinfo/networking/virtual-service-all-v1.yaml": virtualservices.networking.istio.io "productpage
Error from server (NotFound): error when deleting "samples/bookinfo/networking/virtual-service-all-v1.yaml": virtualservices.networking.istio.io "reviews" no
Error from server (NotFound): error when deleting "samples/bookinfo/networking/virtual-service-all-v1.yaml": virtualservices.networking.istio.io "ratings" no
Error from server (NotFound): error when deleting "samples/bookinfo/networking/virtual-service-all-v1.yaml": virtualservices.networking.istio.io "details" no
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Task 3: Fault Injection.

Apply Prerequisite Routing Rules:

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-all-v1.yaml
virtualservice.networking.istio.io/productpage created
virtualservice.networking.istio.io/reviews created
virtualservice.networking.istio.io/ratings created
virtualservice.networking.istio.io/details created
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-reviews-test-v2.yaml
virtualservice.networking.istio.io/reviews configured
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Inject HTTP Delay (for user 'jason' to 'ratings'):

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-service-ratings-test-delay.yaml
virtualservice.networking.istio.io/ratings configured
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Confirm rule

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl get virtualservice ratings -o yaml
apiVersion: networking.istio.io/v1
kind: VirtualService
metadata:
  annotations:
    kubectl.kubernetes.io/last-applied-configuration: |
      {"apiVersion":"networking.istio.io/v1","kind":"VirtualService","metadata":{"annotations":{},"name":"ratings","namespace":"default"},"spec":{"hosts":["ratings"],"http":[{"fau
t":{"delay":{"fixedDelay":"7s","percentage":{"value":100}}},"match":[{"headers":{"end-user":{"exact":"jason"}}}],"route":[{"destination":{"host":"ratings","subset":"v1"}}]},{"rout
":[{"destination":{"host":"ratings","subset":"v1"}}]}]}}
  creationTimestamp: "2025-03-26T14:50:05Z"
  generation: 2
  name: ratings
  namespace: default
  resourceVersion: "9804"
  uid: addda084-da93-48ee-ac6c-4d64534a904d
spec:
  hosts:
  - ratings
  http:
  - fault:
      delay:
        fixedDelay: 7s
        percentage:
          value: 100
    match:
    - headers:
        end-user:
          exact: jason
    route:
    - destination:
        host: ratings
        subset: v1
  - route:
    - destination:
        host: ratings
        subset: v1
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Logged in as Jason- test delay

BookInfo Sample   jason
                                                                       Sign out

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 →

Error fetching product details
Sorry, product details are currently unavailable for this book.

Error fetching product reviews
Sorry, product reviews are currently unavailable for this book.

Inject HTTP Abort (for user 'jason' to 'ratings'):

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/bookinfo/networking/virtual-servic
virtualservice.networking.istio.io/ratings configured
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Clean up

```
 C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl delete -f samples/bookinfo/networking/virtual-service-all-v1.yaml
rtualservice.networking.istio.io "productpage" deleted
rtualservice.networking.istio.io "reviews" deleted
rtualservice.networking.istio.io "ratings" deleted
rtualservice.networking.istio.io "details" deleted
 C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Task 4: Circuit Breaking

Deploy httpbin Service:

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/httpbin/httpbin.yaml
serviceaccount/httpbin created
service/httpbin created
deployment.apps/httpbin created
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Apply Circuit Breaker Destination Rule:

Created yaml file to run this

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f .\httpbin-dr.yaml
destinationrule.networking.istio.io/httpbin created
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Verify

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl get destinationrule httpbin -o yaml
apiVersion: networking.istio.io/v1
kind: DestinationRule
metadata:
  annotations:
    kubectl.kubernetes.io/last-applied-configuration: |
      {"apiVersion":"networking.istio.io/v1","kind":"DestinationRule","metadata":{"annotations":{},"name":"httpbin","namespace":"default"},"spec":{"host":"httpbin","trafficPolicy":
{"connectionPool":{"http":{"http1MaxPendingRequests":1,"maxRequestsPerConnection":1},"tcp":{"maxConnections":1}},"outlierDetection":{"baseEjectionTime":"3m","consecutive5xxErrors":
1,"interval":"1s","maxEjectionPercent":100}}}}
  creationTimestamp: "2025-03-26T14:59:21Z"
  generation: 1
  name: httpbin
  namespace: default
  resourceVersion: "10885"
  uid: 59d970c2-44bd-4ada-9fd7-62d1a1d19cce
spec:
  host: httpbin
  trafficPolicy:
    connectionPool:
      http:
        http1MaxPendingRequests: 1
        maxRequestsPerConnection: 1
      tcp:
        maxConnections: 1
    outlierDetection:
      baseEjectionTime: 3m
      consecutive5xxErrors: 1
      interval: 1s
      maxEjectionPercent: 100
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Deploy fortio client

```
      maxEjectionPercent: 100
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl apply -f samples/httpbin/sample-client/fortio-deploy.yaml
service/fortio created
deployment.apps/fortio-deploy created
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Pods verified

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl get pods
NAME                                   READY   STATUS    RESTARTS   AGE
bookinfo-gateway-istio-76d7c74cf4-xrsg6   1/1   Running   0          67m
details-v1-79dfbd6fff-7kb58            2/2     Running   0          70m
fortio-deploy-b6757cbbb-vnm5w          2/2     Running   0          15s
httpbin-7b549f7859-1h8xh               2/2     Running   0          5m6s
productpage-v1-dffc47f64-kz96b         2/2     Running   0          70m
ratings-v1-65f797b499-9mcz2            2/2     Running   0          70m
reviews-v1-5c4d6d447c-q76f2            2/2     Running   0          70m
reviews-v2-65cb66b45c-r546x            2/2     Running   0          70m
reviews-v3-f68f94645-8tsml             2/2     Running   0          70m
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

set portio pod variable

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> echo $FORTIO_POD
fortio-deploy-b6757cbbb-vnm5w
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Make single call from fortio

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl exec $FORTIO_POD -c fortio -- /usr/bin/fortio curl -quiet http://httpbin:8000/get
{
  "args": {},
  "headers": {
    "Host": [
      "httpbin:8000"
    ],
    "User-Agent": [
      "fortio.org/fortio-1.66.5"
    ],
    "X-Envoy-Attempt-Count": [
      "1"
    ],
    "X-Forwarded-Client-Cert": [
      "By=spiffe://cluster.local/ns/default/sa/httpbin;Hash=b5fb05715173145b27918b6a459bbfbeea414da2d62c5d15aebee4d6369419d9;Subject=\"\";URI=spiffe://cluster.local/ns/default/sa/default"
    ],
    "X-Forwarded-Proto": [
      "http"
    ],
    "X-Request-Id": [
      "bb9c48f6-ca3b-9102-881b-61f95d514124"
    ]
  },
  "method": "GET",
  "origin": "127.0.0.6:38935",
  "url": "http://httpbin:8000/get"
}
HTTP/1.1 200 OK
access-control-allow-credentials: true
access-control-allow-origin: *
content-type: application/json; charset=utf-8
date: Wed, 26 Mar 2025 15:01:57 GMT
content-length: 621
x-envoy-upstream-service-time: 6
server: envoy

PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Trip circuit breaker 2 concurrent connections

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl exec $FORTIO_POD -c fortio -- /usr/bin/fortio load -c 2 -qps 0 -n 20 -loglevel Warning http://httpbin:8000/get
{"ts":1743001344.803342,"level":"info","r":1,"file":"logger.go","line":290,"msg":"Log level is now 3 Warning (was 2 Info)"}
Fortio 1.66.5 running at 0 queries per second, 12->12 procs, for 20 calls: http://httpbin:8000/get
Starting at max qps with 2 thread(s) [gomax 12] for exactly 20 calls (10 per thread + 0)
{"ts":1743001344.808838,"level":"warn","r":23,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
{"ts":1743001344.817158,"level":"warn","r":23,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
{"ts":1743001344.818249,"level":"warn","r":24,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001344.819628,"level":"warn","r":23,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
{"ts":1743001344.820355,"level":"warn","r":23,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
Ended after 23.382854ms : 20 calls. qps=855.33
Aggregated Function Time : count 20 avg 0.0020504754 +/- 0.001835 min 0.000272142 max 0.009051409 sum 0.041809509
# range, mid point, percentile, count
>= 0.000272142 <= 0.001 , 0.000636071 , 15.00, 3
> 0.001 <= 0.002 , 0.0015 , 65.00, 10
> 0.002 <= 0.003 , 0.0025 , 80.00, 3
> 0.003 <= 0.004 , 0.0035 , 95.00, 3
> 0.009 <= 0.00905141 , 0.0090257 , 100.00, 1
# target 50% 0.0017
# target 75% 0.00266667
# target 90% 0.00366667
# target 99% 0.00904113
# target 99.9% 0.00905038
Error cases : count 5 avg 0.0015068666 +/- 0.001381 min 0.000272142 max 0.003985528 sum 0.007534333
# range, mid point, percentile, count
>= 0.000272142 <= 0.001 , 0.000636071 , 60.00, 3
> 0.002 <= 0.003 , 0.0025 , 80.00, 1
> 0.003 <= 0.00398553 , 0.00349276 , 100.00, 1
# target 50% 0.000818036
# target 75% 0.00275
# target 90% 0.00349276
# target 99% 0.00393625
# target 99.9% 0.0039806
# Socket and IP used for each connection:
[0]   5 socket used, resolved to 10.109.156.35:8000, connection timing : count 5 avg 0.0002688158 +/- 0.0003387 min 6.9173e-05 max 0.000943858 sum 0.001344079
[1]   2 socket used, resolved to 10.109.156.35:8000, connection timing : count 2 avg 0.0001195685 +/- 3.057e-05 min 8.9e-05 max 0.000150137 sum 0.000239137
Connection time (s) : count 7 avg 0.00022617371 +/- 0.0002945 min 6.9173e-05 max 0.000943858 sum 0.001583216
Sockets used: 7 (for perfect keepalive, would be 2)
Uniform: false, Jitter: false, Catchup allowed: true
IP addresses distribution:
10.109.156.35:8000: 7
Code 200 : 15 (75.0 %)
Code 503 : 5 (25.0 %)
Response Header Sizes : count 20 avg 183.75 +/- 106.1 min 0 max 245 sum 3675
Response Body/Total Sizes : count 20 avg 709.75 +/- 270.6 min 241 max 866 sum 14195
All done 20 calls (plus 0 warmup) 2.090 ms avg, 855.3 qps
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Trip circuit breaker with 3 concurrent connections

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl exec $FORTIO_POD -c fortio -- /usr/bin/fortio load -c 3 -qps 0 -n 30 -loglevel Warning http://httpbin:8000/get
{"ts":1743001392.010032,"level":"info","r":1,"file":"logger.go","line":290,"msg":"Log level is now 3 Warning (was 2 Info)"}
Fortio 1.66.5 running at 0 queries per second, 12->12 procs, for 30 calls: http://httpbin:8000/get
Starting at max qps with 3 thread(s) [gomax 12] for exactly 30 calls (10 per thread + 0)
{"ts":1743001392.015347,"level":"warn","r":14,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001392.016992,"level":"warn","r":14,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001392.017226,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":2,"run":0}
{"ts":1743001392.018182,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001392.018708,"level":"warn","r":13,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
{"ts":1743001392.018947,"level":"warn","r":13,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001392.020454,"level":"warn","r":13,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
{"ts":1743001392.021384,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":2,"run":0}
{"ts":1743001392.021770,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
{"ts":1743001392.022353,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":2,"run":0}
{"ts":1743001392.023452,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":2,"run":0}
{"ts":1743001392.023582,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001392.024892,"level":"warn","r":14,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001392.026265,"level":"warn","r":14,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":2,"run":0}
{"ts":1743001392.026282,"level":"warn","r":13,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
{"ts":1743001392.027356,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":2,"run":0}
{"ts":1743001392.028319,"level":"warn","r":15,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":2,"run":0}
{"ts":1743001392.028698,"level":"warn","r":14,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":1,"run":0}
{"ts":1743001392.029980,"level":"warn","r":13,"file":"http_client.go","line":1151,"msg":"Non ok http code","code":503,"status":"HTTP/1.1 503","thread":0,"run":0}
Ended after 21.453034ms : 30 calls. qps=1398.4
Aggregated Function Time : count 30 avg 0.0018021262 +/- 0.001409 min 0.000284413 max 0.004800346 sum 0.054063785
# range, mid point, percentile, count
>= 0.000284413 <= 0.001 , 0.000642207 , 40.00, 12
> 0.001 <= 0.002 , 0.0015 , 63.33, 7
> 0.002 <= 0.003 , 0.0025 , 73.33, 3
> 0.003 <= 0.004 , 0.0035 , 86.67, 4
> 0.004 <= 0.00480035 , 0.00440017 , 100.00, 4
# target 50% 0.00142857
# target 75% 0.003125
# target 90% 0.00420009
# target 99% 0.00474032
# target 99.9% 0.00479434
Error cases : count 19 avg 0.00085724463 +/- 0.0005512 min 0.000284413 max 0.002438373 sum 0.016287648
# range, mid point, percentile, count
>= 0.000284413 <= 0.001 , 0.000642207 , 63.16, 12
> 0.001 <= 0.002 , 0.0015 , 94.74, 6
> 0.002 <= 0.00243837 , 0.00221919 , 100.00, 1
# target 50% 0.000837367
# target 75% 0.001375
# target 90% 0.00185
# target 99% 0.00235508
# target 99.9% 0.00243004
# Socket and IP used for each connection:
[0]   6 socket used, resolved to 10.109.156.35:8000, connection timing : count 6 avg 0.00037879717 +/- 0.0005527 min 7.2839e-05 max 0.001604368 sum 0.002272783
[1]   8 socket used, resolved to 10.109.156.35:8000, connection timing : count 8 avg 0.00027532363 +/- 0.0003065 min 7.9311e-05 max 0.000914874 sum 0.002202589
[2]   7 socket used, resolved to 10.109.156.35:8000, connection timing : count 7 avg 9.5249571e-05 +/- 1.801e-05 min 6.9473e-05 max 0.000116705 sum 0.000666747
Connection time (s) : count 21 avg 0.00024486281 +/- 0.0003689 min 6.9473e-05 max 0.001604368 sum 0.005142119
Sockets used: 21 (for perfect keepalive, would be 3)
Uniform: false, Jitter: false, Catchup allowed: true
IP addresses distribution:
10.109.156.35:8000: 21
Code 200 : 11 (36.7 %)
Code 503 : 19 (63.3 %)
Response Header Sizes : count 30 avg 89.833333 +/- 118.1 min 0 max 245 sum 2695
Response Body/Total Sizes : count 30 avg 470.16667 +/- 301.2 min 241 max 866 sum 14105
All done 30 calls (plus 0 warmup) 1.802 ms avg, 1398.4 qps
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Check proxy status

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl exec $FORTIO_POD -c istio-proxy -- pilot-agent request GET stats | Select-String "httpbin.*pending"

cluster.outbound|8000||httpbin.default.svc.cluster.local;.circuit_breakers.default.remaining_pending: 1
cluster.outbound|8000||httpbin.default.svc.cluster.local;.circuit_breakers.default.rq_pending_open: 0
cluster.outbound|8000||httpbin.default.svc.cluster.local;.circuit_breakers.high.rq_pending_open: 0
cluster.outbound|8000||httpbin.default.svc.cluster.local;.upstream_rq_pending_active: 0
cluster.outbound|8000||httpbin.default.svc.cluster.local;.upstream_rq_pending_failure_eject: 0
cluster.outbound|8000||httpbin.default.svc.cluster.local;.upstream_rq_pending_overflow: 24
cluster.outbound|8000||httpbin.default.svc.cluster.local;.upstream_rq_pending_total: 27


PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```

Cleanup

```
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl delete destinationrule httpbin
destinationrule.networking.istio.io "httpbin" deleted
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl delete -f samples/httpbin/sample-client/fortio-deploy.yaml
service "fortio" deleted
deployment.apps "fortio-deploy" deleted
PS C:\Users\user\Documents\IstioProject\istio-1.25.0> kubectl delete -f samples/httpbin/httpbin.yaml
serviceaccount "httpbin" deleted
service "httpbin" deleted
deployment.apps "httpbin" deleted
PS C:\Users\user\Documents\IstioProject\istio-1.25.0>
```