

Kubernetes Operator and rate limit istio

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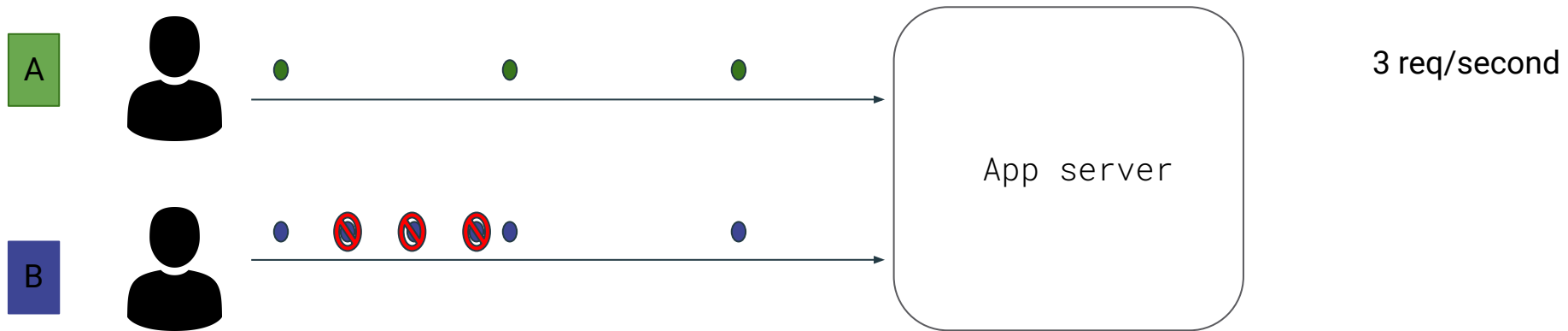
#IstioCon

Introduction

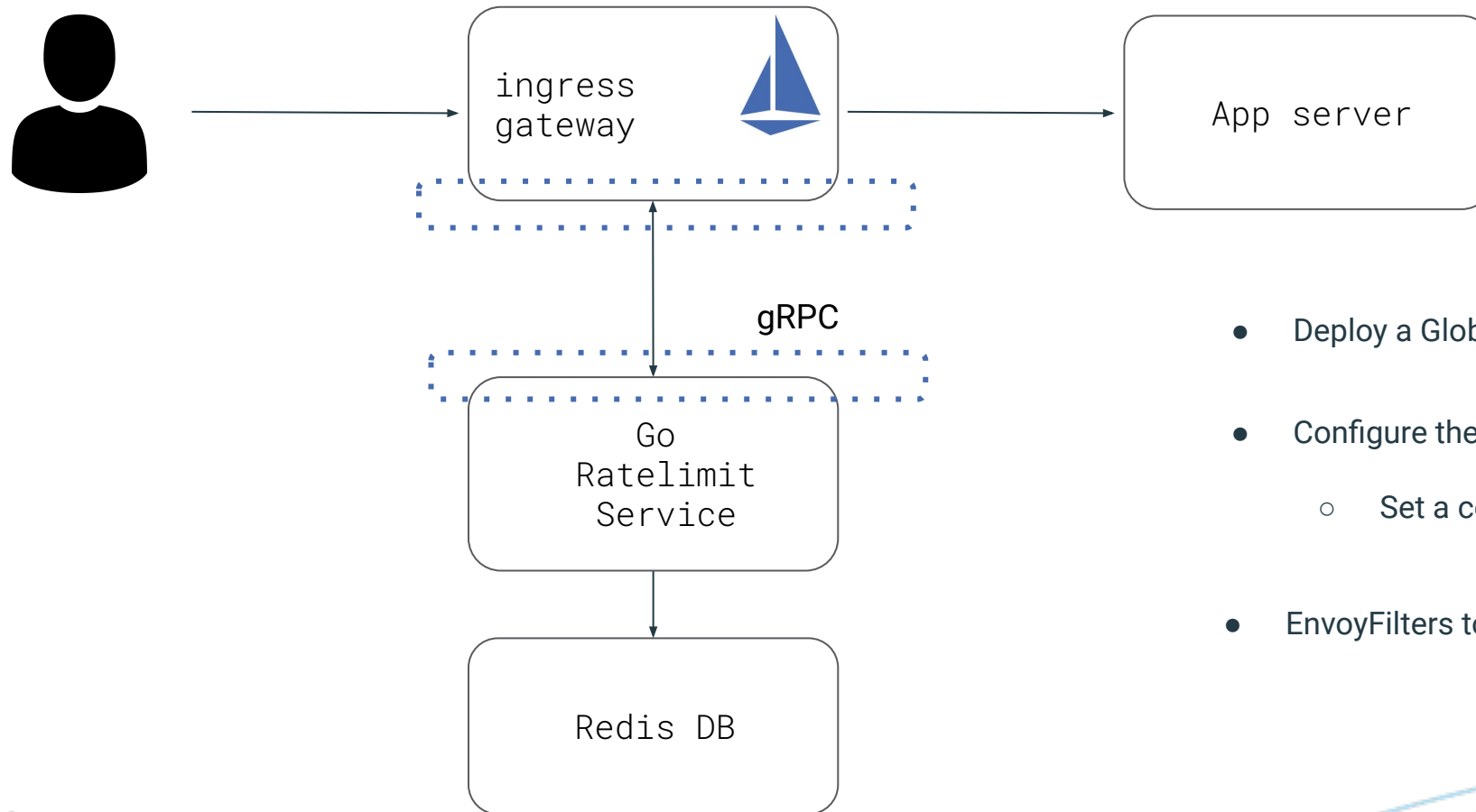
- Global Rate limiting in istio
- Kubernetes operators



Why do we need to limit?



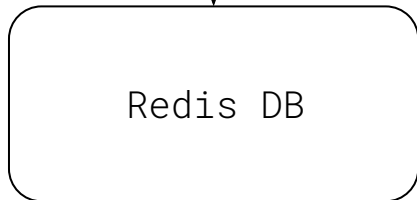
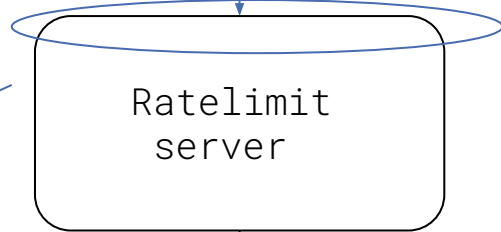
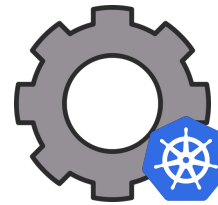
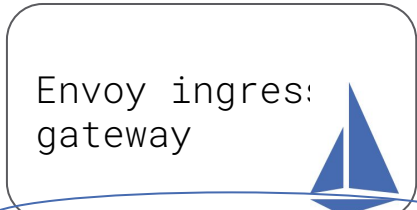
So you want to implement the rate limiting



- Deploy a Global Lyft's rate limit service.
- Configure the Global Rate Limit Service
 - Set a config via configmap you want to use to limit
- EnvoyFilters to use the Global Rate limit Service



So..What is rate limit operator?



```
- actions:  
- request_headers:  
  descriptor_key: client-ip  
  header_name: real-client-ip  
- destination_cluster: {}
```

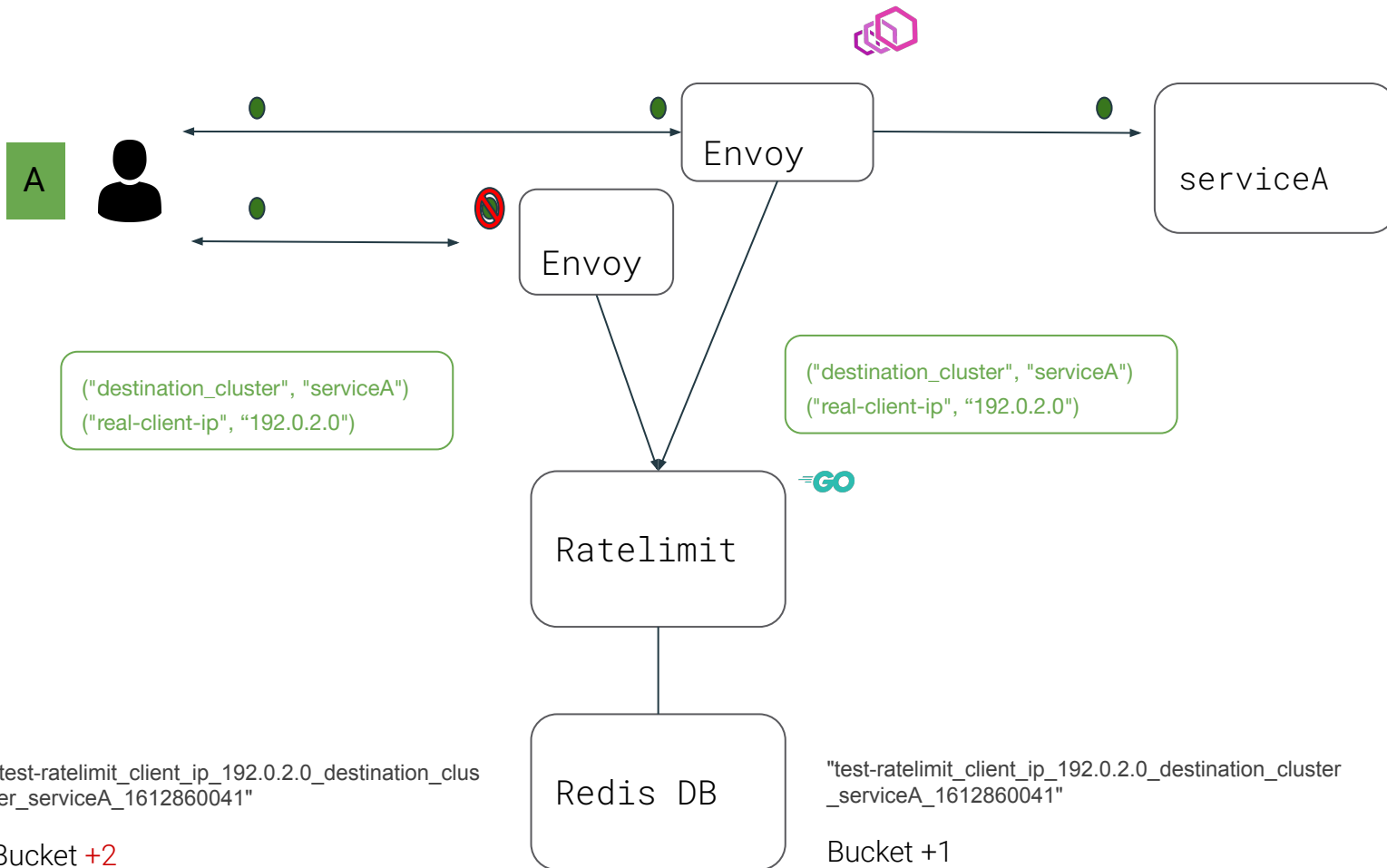
```
descriptors:  
- key: client_ip  
  descriptors:  
  - key: destination_cluster  
    value: serviceA  
  rate_limit:  
    requests_per_unit: 50  
    unit: second  
domain: test-ratelimit
```

```
apiVersion: networking.softonic.io/v1alpha1  
kind: RateLimit  
metadata:  
  finalizers:  
  - ratelimit.networking.softonic.io  
Spec:  
  rate:  
  - dimensions:  
    - request_header:  
      descriptor_key: client-ip  
      header_name: real-client-ip  
      requestPerUnit: 50  
      unit: second  
  targetRef:  
    apiVersion: networking.istio.io/v1alpha3  
    kind: VirtualService  
    name: foo  
    namespace: foo
```



Limit 1 req/sec

192.0.2.0



```

("destination_cluster", "serviceA")
("real-client-ip", "192.0.2.0")

```

```

("destination_cluster", "serviceA")
("real-client-ip", "192.0.2.0")

```

```

"test-ratelimit_client_ip_192.0.2.0_destination_cluster_serviceA_1612860041"

```

```

"test-ratelimit_client_ip_192.0.2.0_destination_cluster_serviceA_1612860041"

```

Bucket +2

Bucket +1

```

- actions:
- request_headers:
  descriptor_key: client-ip
  header_name: real-client-ip
- destination_cluster: {}

```

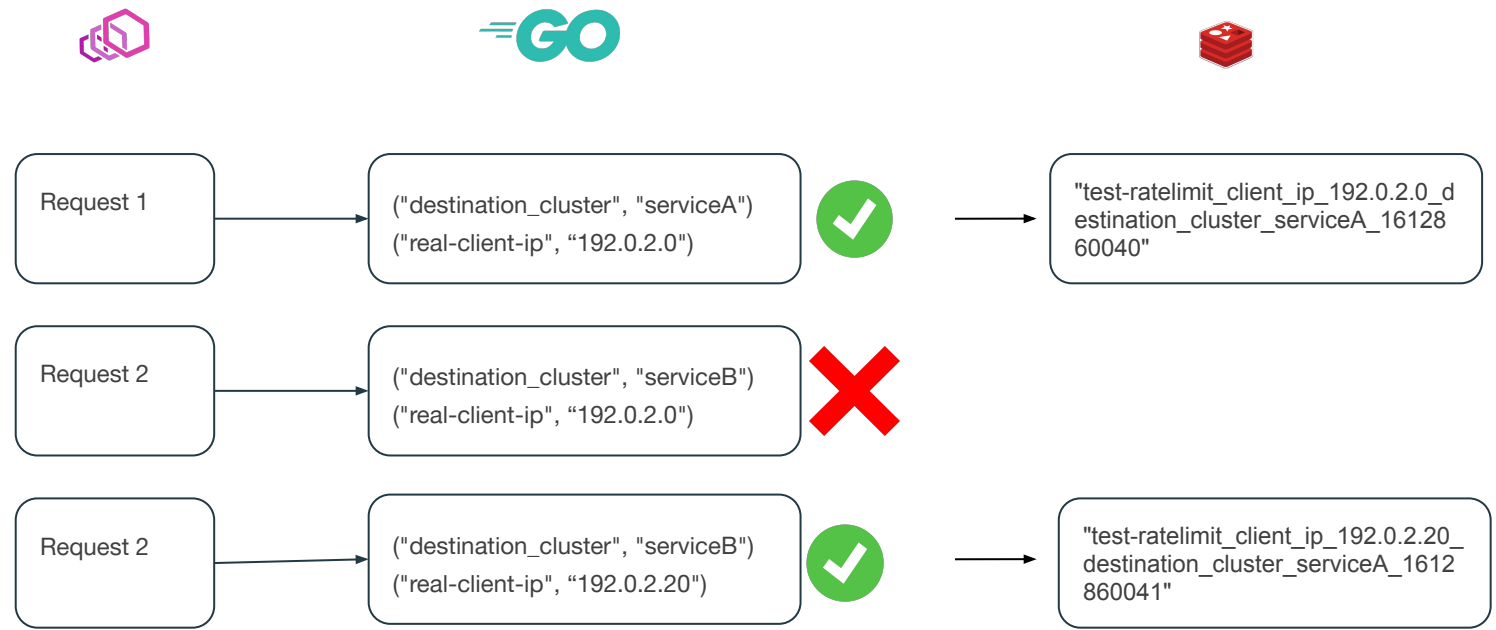
```

descriptors:
- key: client_ip
  descriptors:
  - key: destination_cluster
    value: serviceA
    rate_limit:
      requests_per_unit: 50
      unit: second
    domain: test-ratelimit

```



Envoy RL filter Configuration



Ratelimit
service config

Operator next version improvements. ToDo

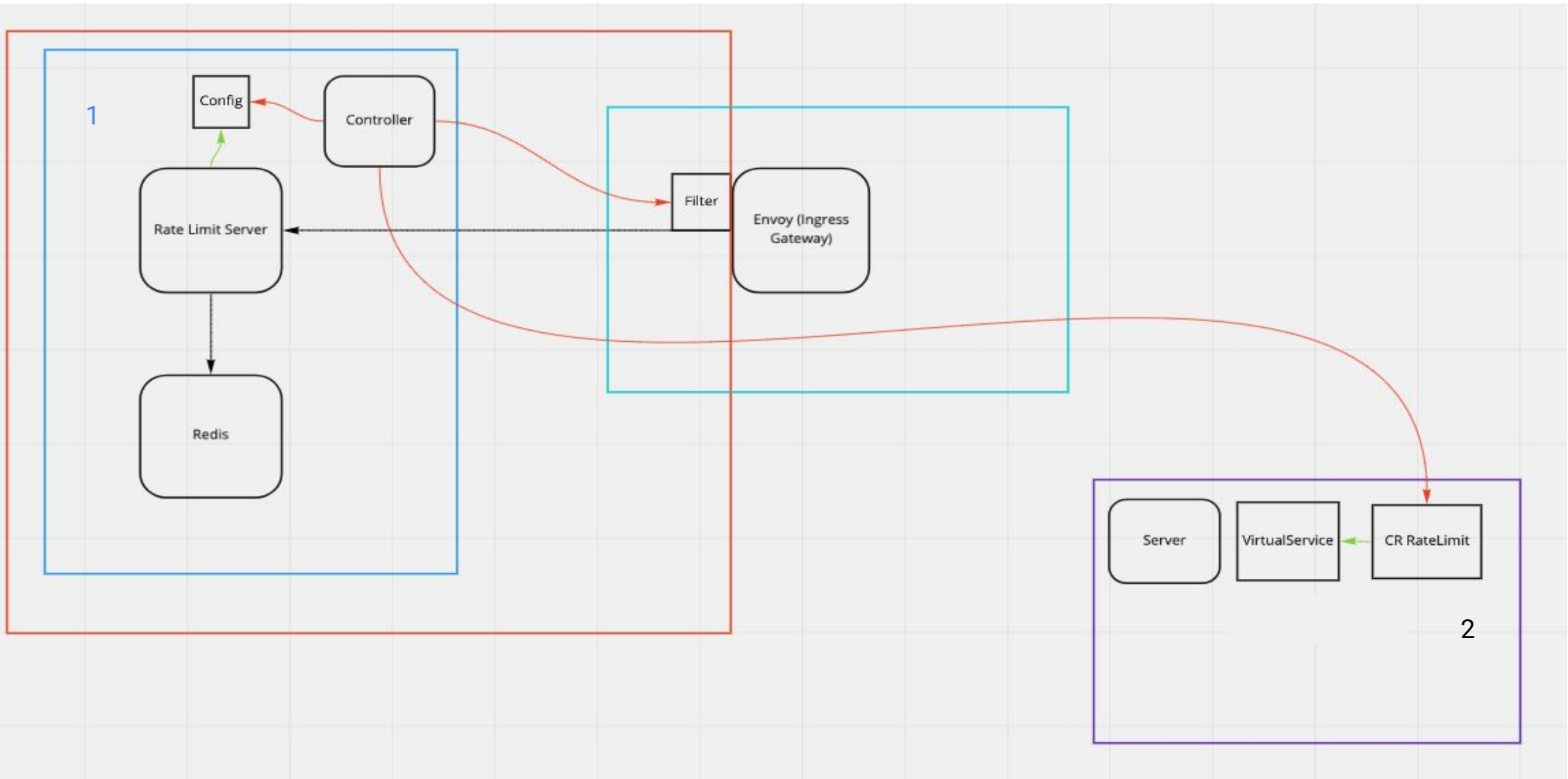
- Support not only destination_cluster
- Support more than 2 subactions



Demo

- Let's use a simple application (httpbin)
- We want to throttle to 1 req/sec to requests with Host header localhost
- Install helm package with the operator and the Global lyft's service
- Deploy Custom Resource with the desired rate limit configuration







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