



KEDA meets GatewayAPI

Jan Wozniak
Kedify

- * GatewayAPI
- * KEDA
- * KEDA http-add-on
- * Demo

Gateway API



Gateway
Controller



Gateway



Gateway
Controller



Gateway



Route



Gateway
Controller



Gateway



Gateway
Controller



Route *

* HTTPRoute
GRPCRoute
TCPRoute
UDPRoute
TLSRoute



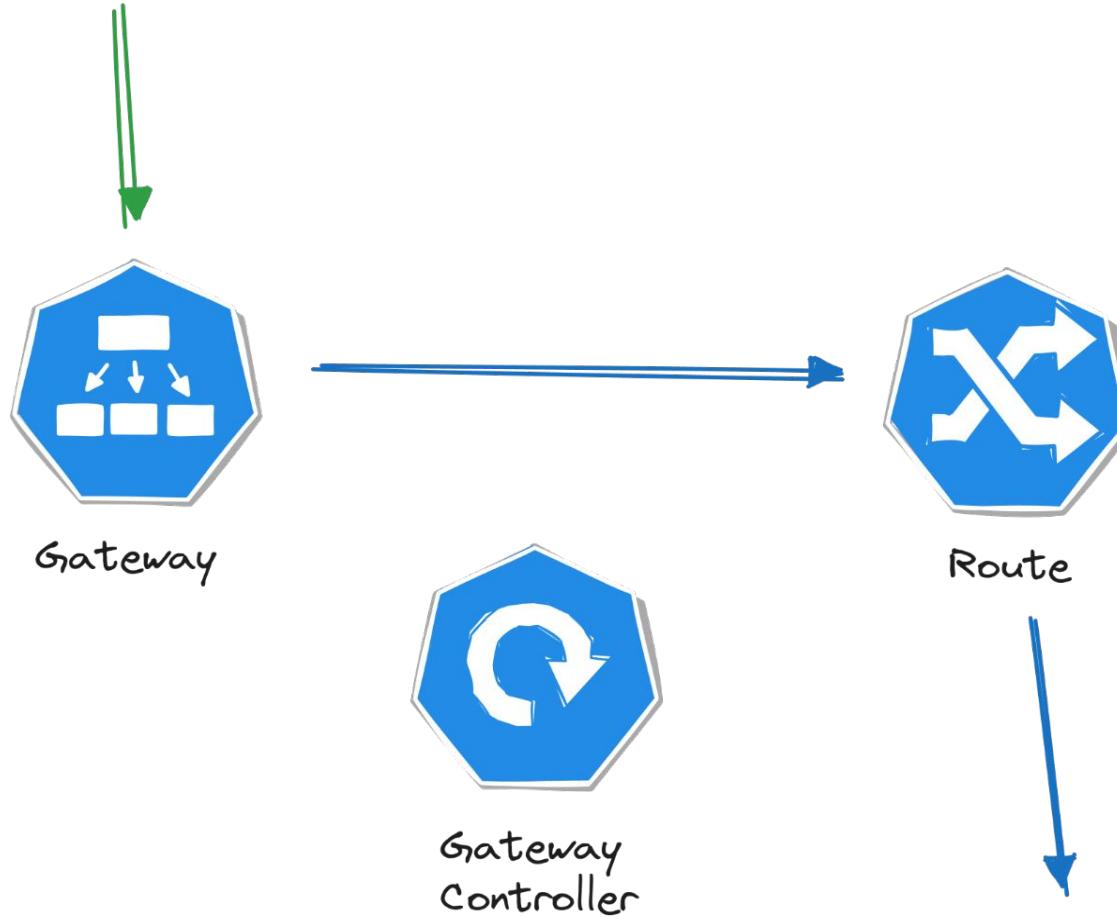
Gateway

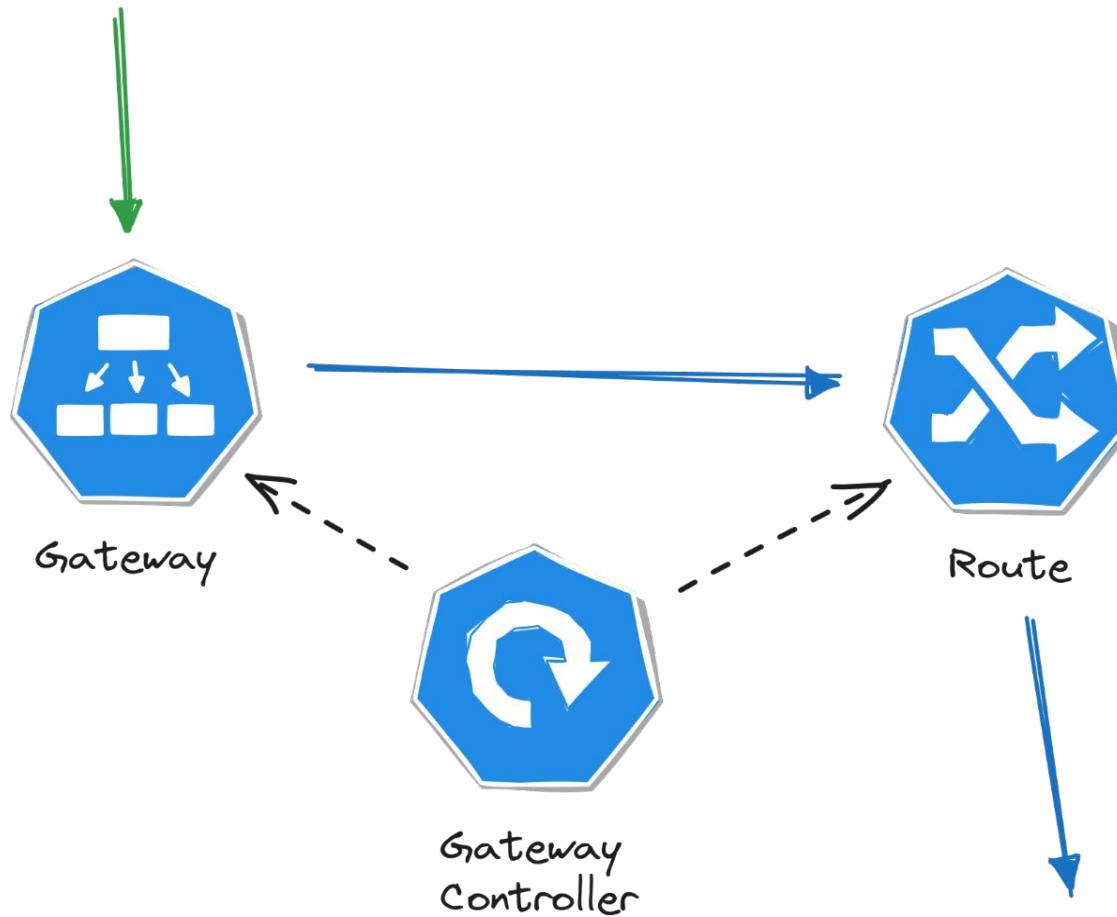


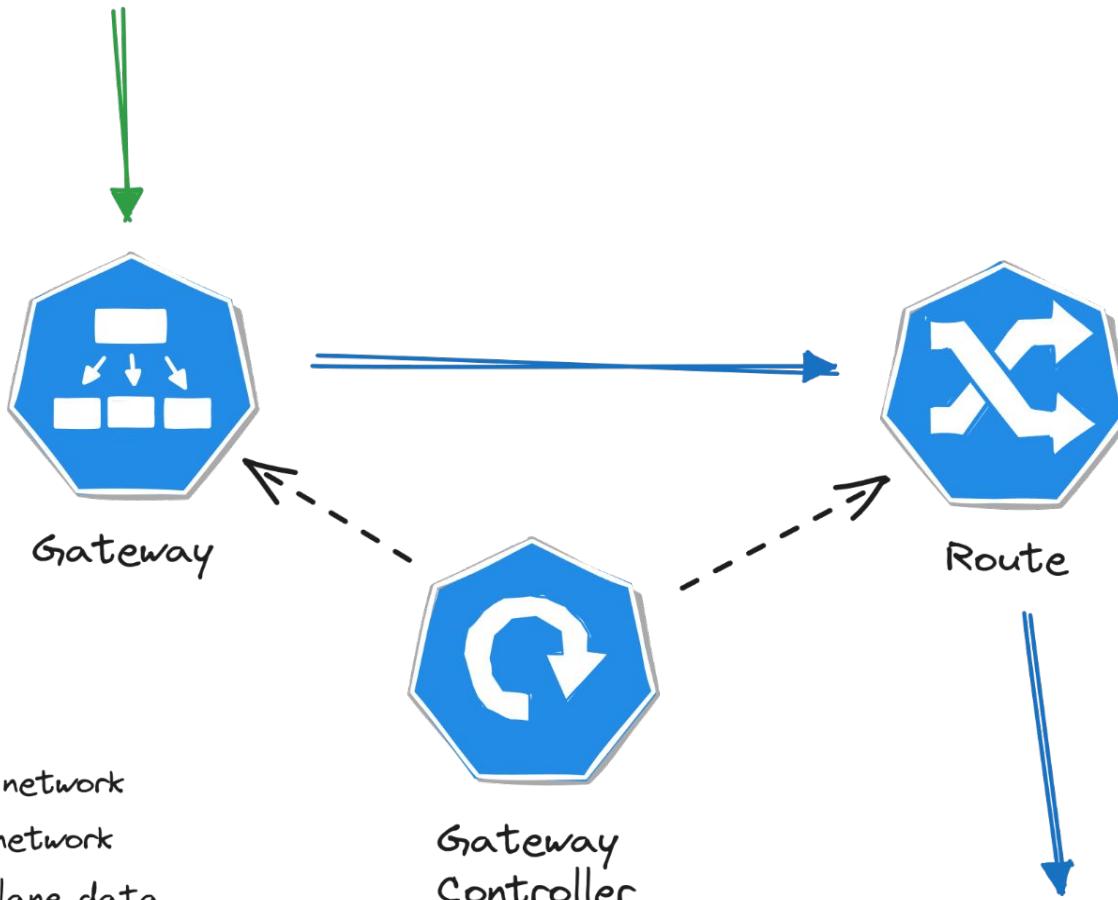
Route



Gateway
Controller







- external network
- internal network
- > control plane data



Ingress
Controller



Ingress
Controller



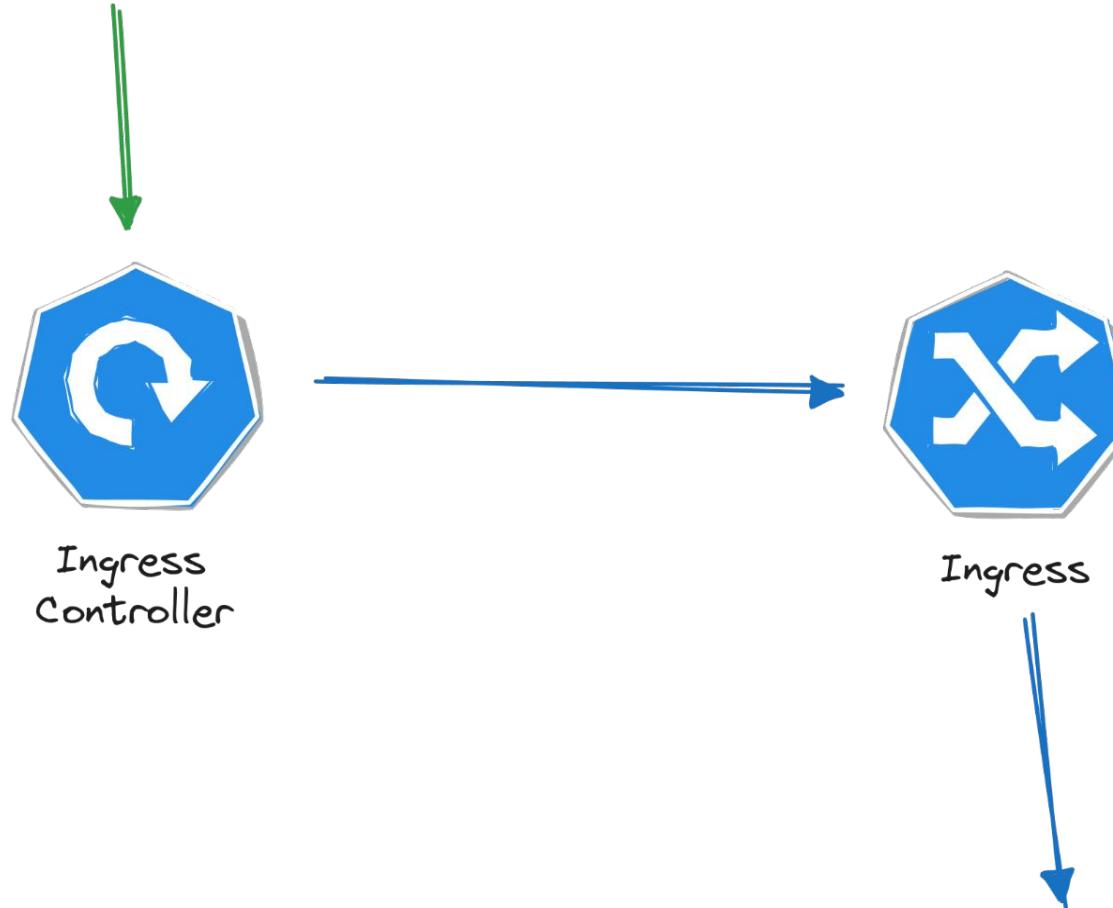
Ingress

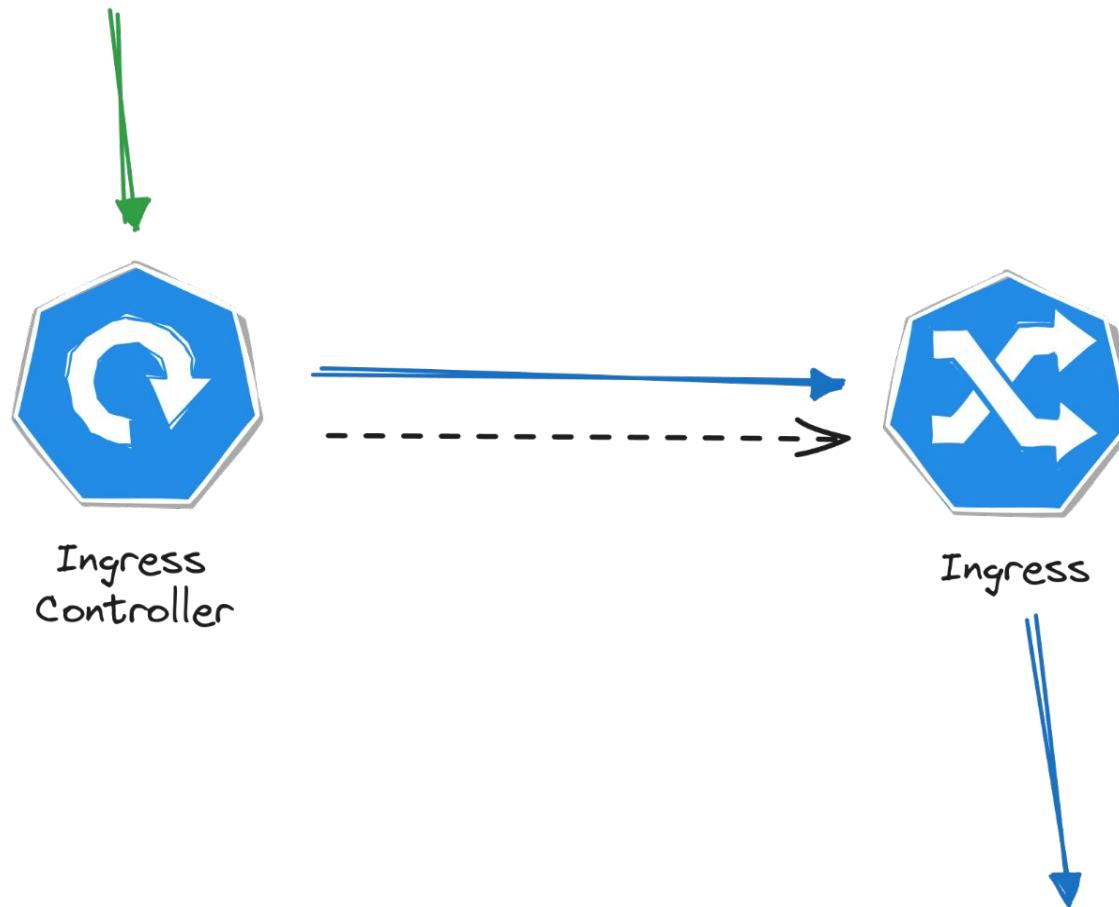


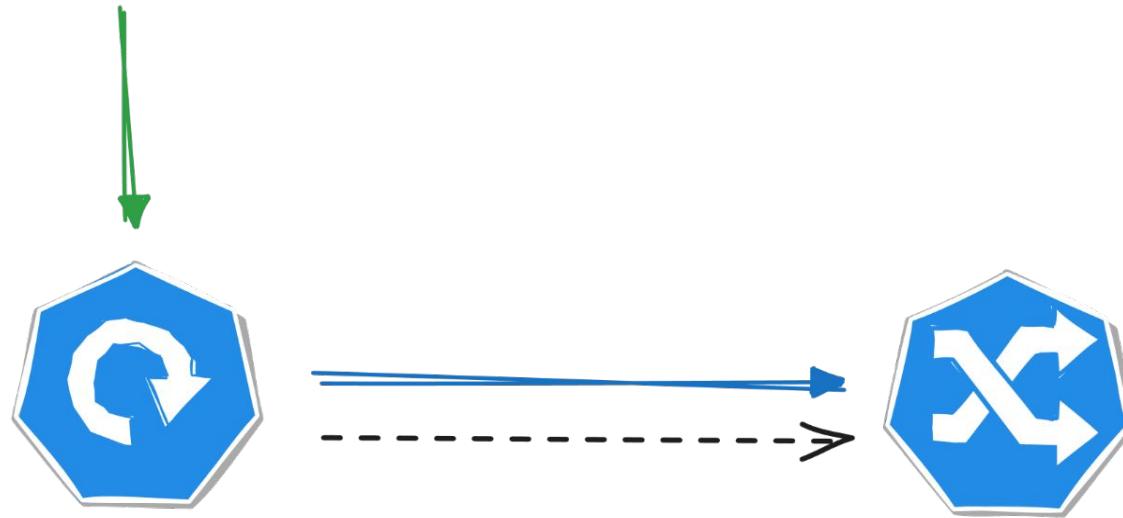
Ingress
Controller



Ingress



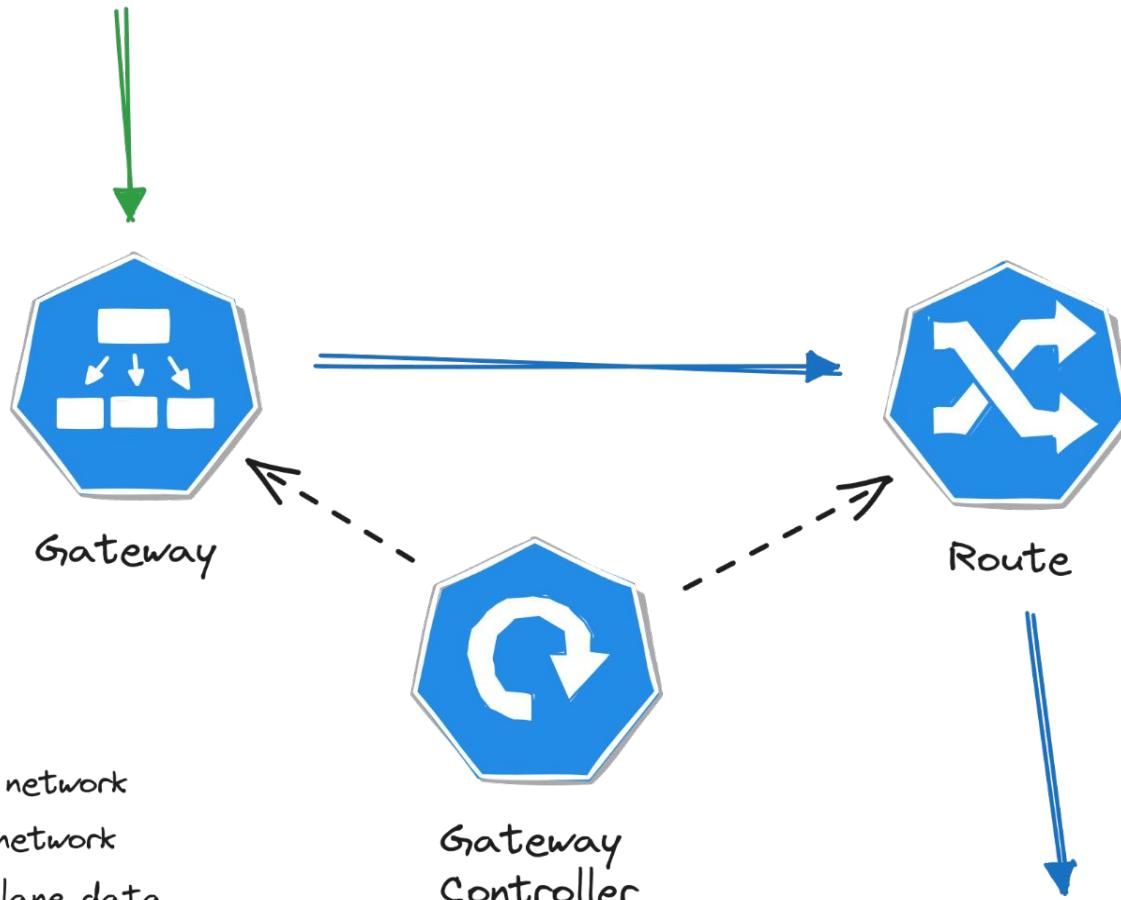




Ingress
Controller

Ingress

- external network
- internal network
- > control plane data



- external network
- internal network
- > control plane data

```
kind: HTTPRoute
metadata:
  name: example-httproute
spec:
  parentRefs:
    - name: my-nginx-gateway
  hostnames: ["example.com"]
  rules:
    - matches:
        - path:
            type: PathPrefix
            value: /foo
  backendRefs:
    - name: app
      port: 80
```

```
kind: Ingress
metadata:
  name: example-ingress
spec:
  ingressClassName: nginx
  rules:
  - host: "example.com"
    http:
      paths:
      - path: /foo
        pathType: Prefix
        backend:
          service:
            name: app
            port: { number: 80 }
```

```
kind: HTTPRoute
metadata:
  name: example-httproute
spec:
  parentRefs:
    - name: my-nginx-gateway
  hostnames: ["example.com"]
  rules:
    - matches:
        - path:
            type: PathPrefix
            value: /foo
  backendRefs:
    - name: app
      port: 80
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  ingressClassName: nginx
  rules:
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      http:
        paths:
          - path: /foo
            pathType: Prefix
            backend:
              service:
                name: app
                port: { number: 80 }
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  - matches:
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        type: PathPrefix
        value: /foo
  backendRefs:
    - name: app
      port: 80
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  ingressClassName: nginx
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  - host: "example.com"
    http:
      paths:
        - path: /foo
          pathType: Prefix
        backend:
          service:
            name: app
            port: { number: 80 }
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          type: PathPrefix
          value: /foo
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    - name: app
      port: 80
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spec:
  ingressClassName: nginx
  rules:
    - host: "example.com"
      http:
        paths:
          - path: /foo
            pathType: Prefix
      backend:
        service:
          name: app
          port: { number: 80 }
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    - name: my-nginx-gateway
  hostnames: ["example.com"]
  rules:
    - matches:
        - path:
            type: PathPrefix
            value: /foo
  backendRefs:
    - name: app
      port: 80
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kind: Ingress
metadata:
  name: example-ingress
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  ingressClassName: nginx
  rules:
    - host: "example.com"
      http:
        paths:
          - path: /foo
            pathType: Prefix
            backend:
              service:
                name: app
                port: { number: 80 }
```

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kind: HTTPRoute
metadata:
  name: example-httproute
spec:
  parentRefs:
    - name: my-nginx-gateway
  hostnames: ["example.com"]
  rules:
    - matches:
        - path:
            type: PathPrefix
            value: /foo
  backendRefs:
    - name: app
      port: 80
```

```
kind: Ingress
metadata:
  name: example-ingress
spec:
  ingressClassName: nginx
  rules:
    - host: "example.com"
      http:
        paths:
          - path: /foo
            pathType: Prefix
            backend:
              service:
                name: app
                port: { number: 80 }
```

```
kind: HTTPRoute
metadata:
  name: example-httproute
spec:
  rules:
  - ...
    backendRefs:
    - name: app1-a
      weight: 10
    - name: app1-b
      weight: 90
```

```
kind: Ingress
metadata:
  name: example-ingress
spec:
  rules:
  - http:
    ...
    paths:
    - backend:
      service:
        name: app1
```

```
kind: HTTPRoute
metadata:
  name: example-httproute
spec:
  rules:
  - ...
    backendRefs:
      - name: app1-a
        filters:
          - urlRewrite: blue
      - name: app1-b
        filters:
          - urlRewrite: green
```

```
kind: Ingress
metadata:
  name: example-ingress
spec:
  rules:
  - http:
    ...
    paths:
    - backend:
        service:
          name: app1
```

```
kind: ReferenceGrant
metadata:
  name: app
  namespace: xyz
spec:
  from:
  - kind: HTTPRoute
    namespace: default
  to:
  - kind: Service
    name: foo
```

```
kind: ReferenceGrant
metadata:
  name: app
  namespace: xyz
spec:
  from:
    - kind: HTTPRoute
      namespace: default
  to:
    - kind: Service
      name: foo
```

```
kind: Service
metadata:
  name: hack
  namespace: default
spec:
  externalName: foo.xyz.svc
  type: ExternalName
```

```
kind: ReferenceGrant
metadata:
  name: app
  namespace: xyz
spec:
  from:
  - kind: HTTPRoute
    namespace: default
  to:
  - kind: Service
    name: foo
```

```
kind: Service
metadata:
  name: hack
  namespace: default
spec:
  externalName: foo.xyz.svc
  type: ExternalName
```

```
kind: ReferenceGrant
metadata:
  name: app
namespace: xyz
spec:
  from:
    - kind: HTTPRoute
      namespace: default
to:
  - kind: Service
    name: foo
```

```
kind: Service
metadata:
  name: hack
  namespace: default
spec:
  externalName: foo.xyz.svc
  type: ExternalName
```

KEDA

ScaledObject



TriggerAuthentication



Metrics API



Operator



Webhooks



Metrics API



Operator



Webhooks

ScaledObject



TriggerAuthentication



ScaledObject



TriggerAuthentication



ScaledJob

ScaledObject



TriggerAuthentication



ScaledJob



ClusterTriggerAuthentication

ScaledObject



TriggerAuthentication



CloudEventSource



ScaledJob



ClusterTriggerAuthentication

ScaledObject



TriggerAuthentication



Metrics API



Operator

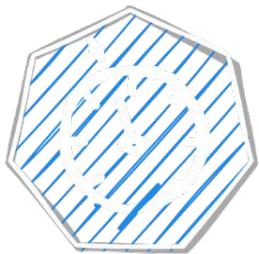


Webhooks

ScaledObject



TriggerAuthentication



Webhooks

ScaledObject



TriggerAuthentication

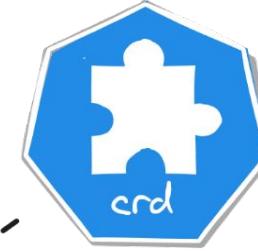


Webhooks

ScaledObject



TriggerAuthentication



kube-api



Webhooks



ScaledObject



TriggerAuthentication



kube-api

initialize

ok / deny



Webhooks

ScaledObject



TriggerAuthentication



Metrics API



Operator

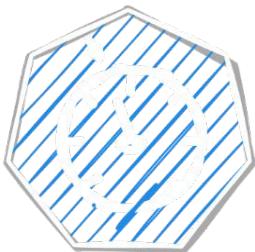


Webhooks

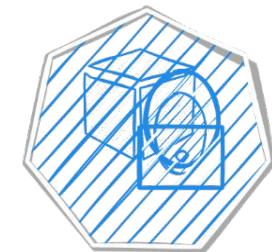
ScaledObject



TriggerAuthentication



Operator

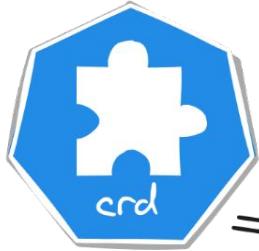


ScaledObject



Operator

ScaledObject

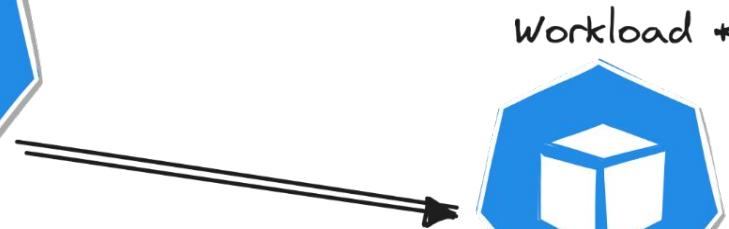


Workload



Operator

ScaledObject



Operator

* Deployment
StatefulSet
Argo Rollouts
...
** Jobs

ScaledObject

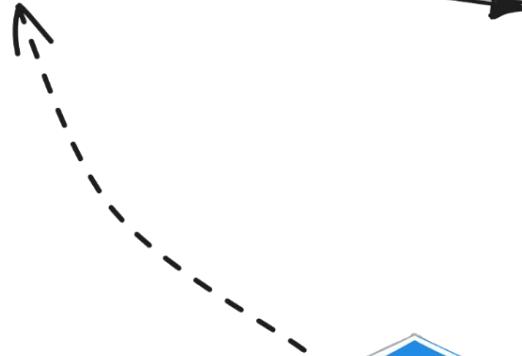


crd

Workload



Operator



ScaledObject



crd

Workload



HPA



Operator



ScaledObject



Workload



Metrics API



HPA



Operator

ScaledObject



Workload



HPA

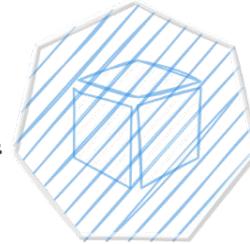


Operator

ScaledObject



Workload

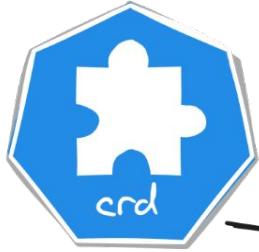


HPA

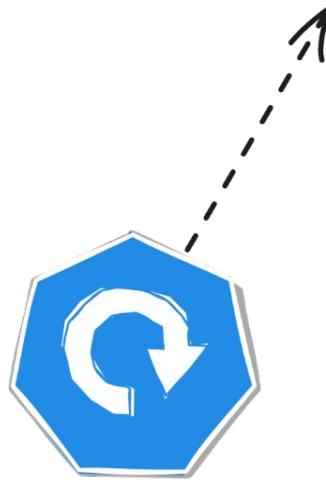


Operator

ScaledObject



HPA



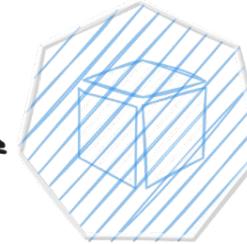
Operator



ScaledObject



Workload



HPA



Operator

ScaledObject



Workload

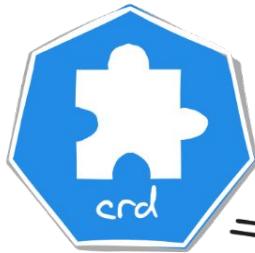


HPA



Operator

ScaledObject



crd

Workload



HPA



Operator

ScaledObject



crd

Workload

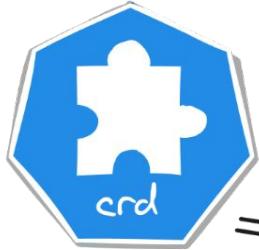


HPA



Operator

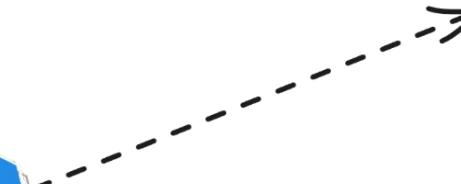
ScaledObject



Workload



Operator



ScaledObject



crd

Workload

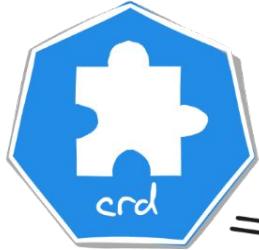


HPA



Operator

ScaledObject



Workload



HPA



Operator

ScaledObject



TriggerAuthentication



Operator



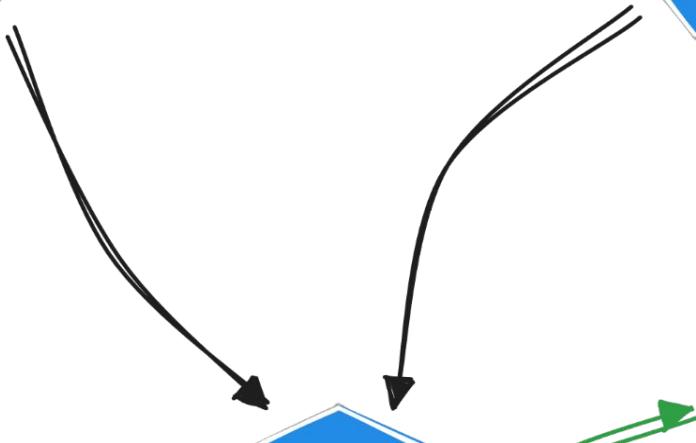
ScaledObject



TriggerAuthentication



Operator



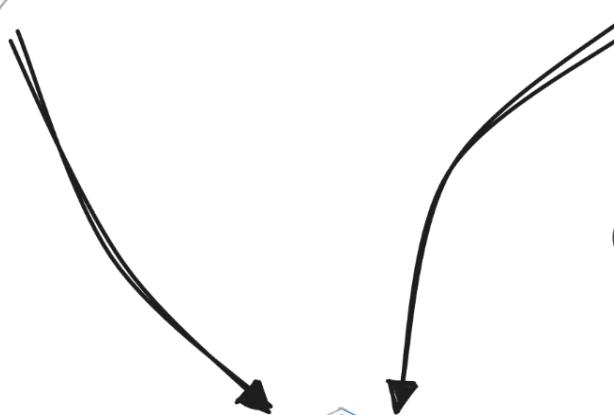
ScaledObject



TriggerAuthentication

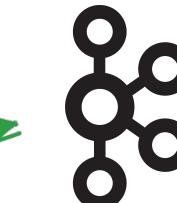


Operator



RabbitMQ

elasticsearch



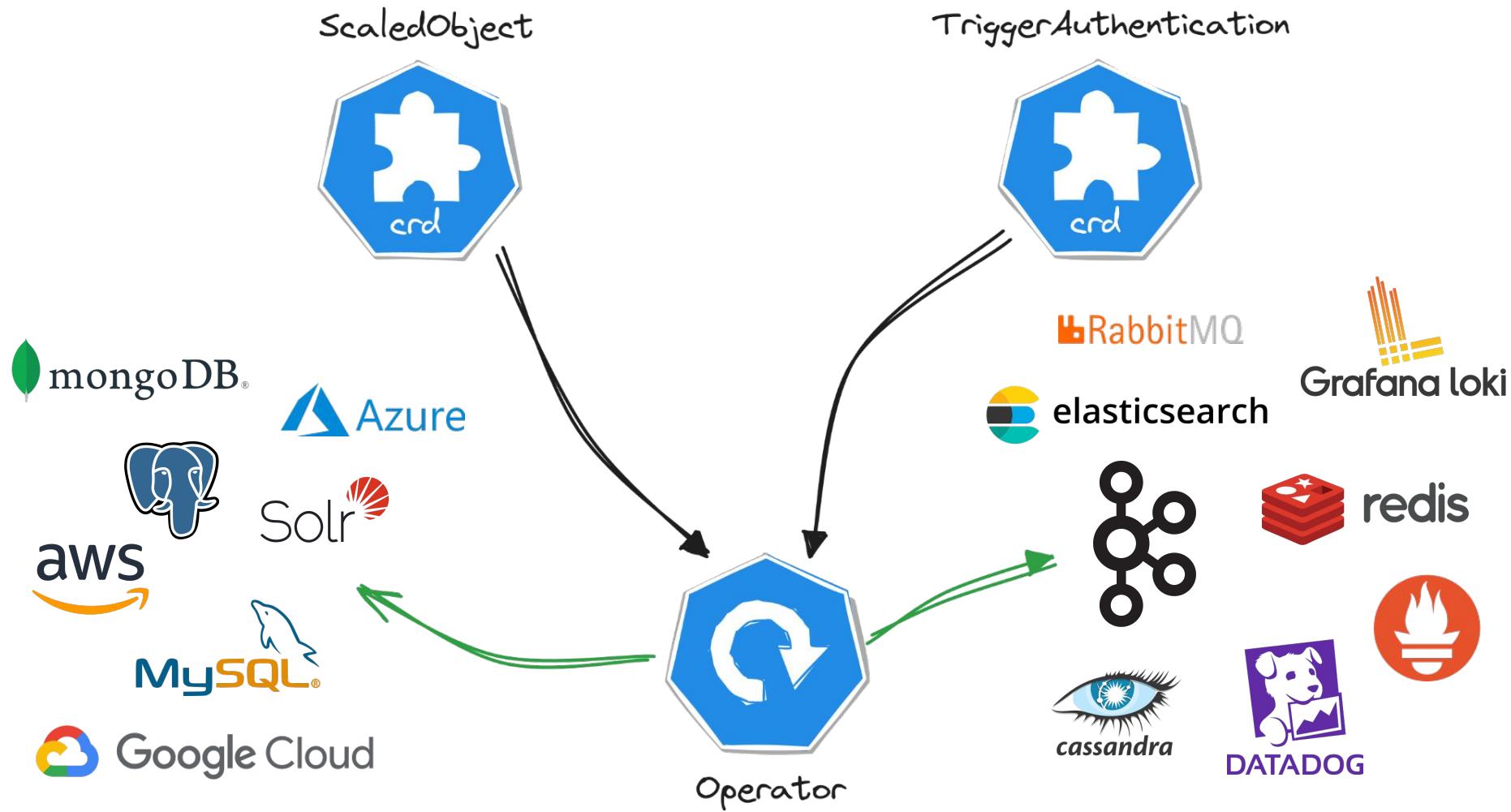
Grafana loki

redis



cassandra

DATADOG



ScaledObject



TriggerAuthentication



Metrics API

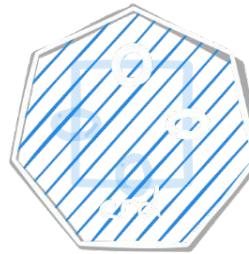


Operator

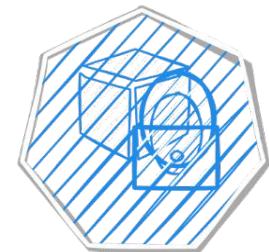


Webhooks

ScaledObject



Metrics API



ScaledObject



Metrics API

ScaledObject



HPA



Metrics API

ScaledObject



crd



Metrics API



kube-api



HPA

ScaledObject



HPA



Metrics API



kube-api



ScaledObject



crd



kube-api



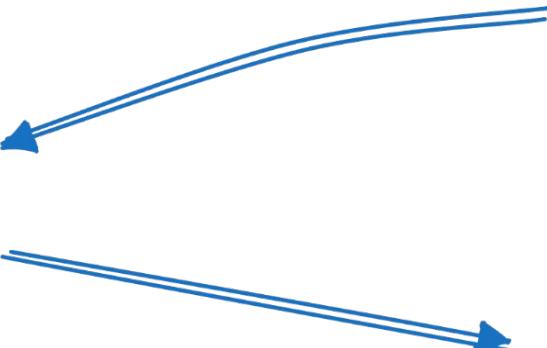
Metrics API



Operator



HPA



ScaledObject



crd



kube-api



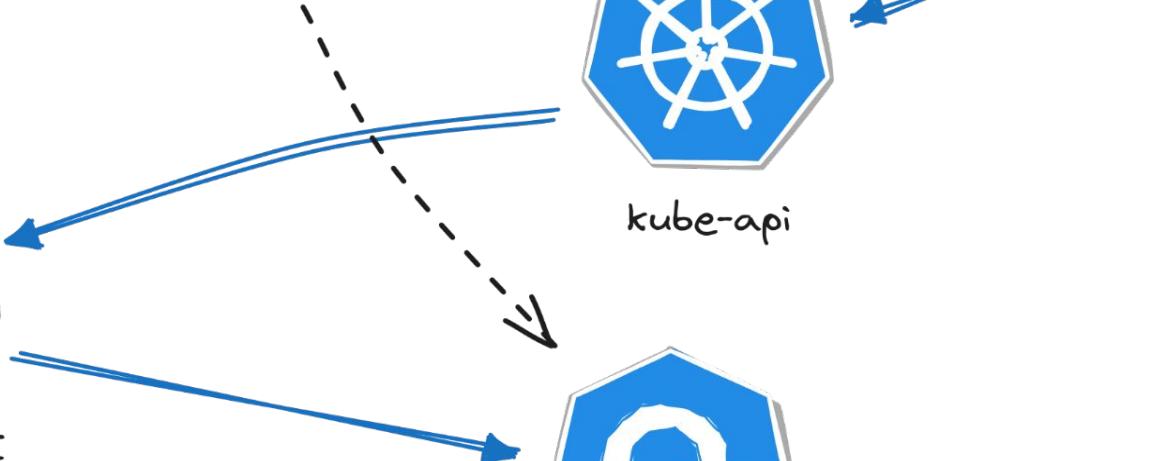
Metrics API



Operator



HPA



ScaledObject



crd



kube-api



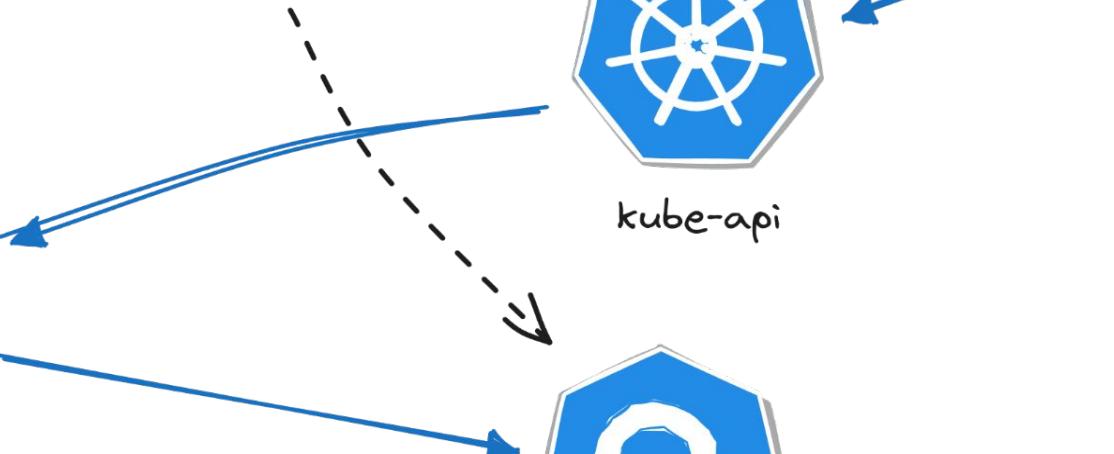
Metrics API



Operator



HPA



ScaledObject



kube-api



Metrics API



Operator



HPA



cassandra



RabbitMQ



MySQL



aws



Azure



Solr



elasticsearch



Google Cloud



Grafana loki



PROMETHEUS



DATADOG



redis



mongoDB

KEDA http-add-on

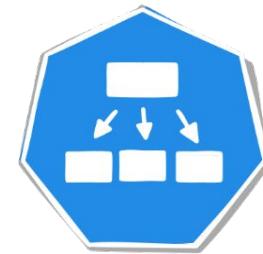
HTTPScaledObject



Scaler

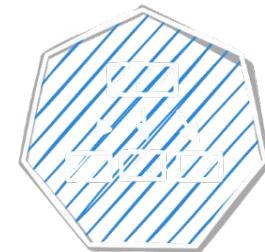
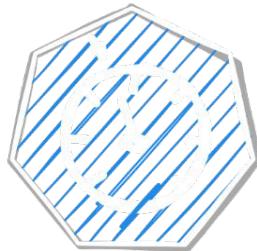


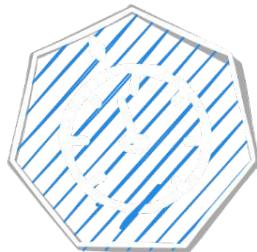
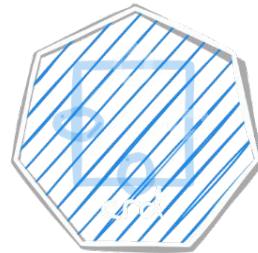
Operator



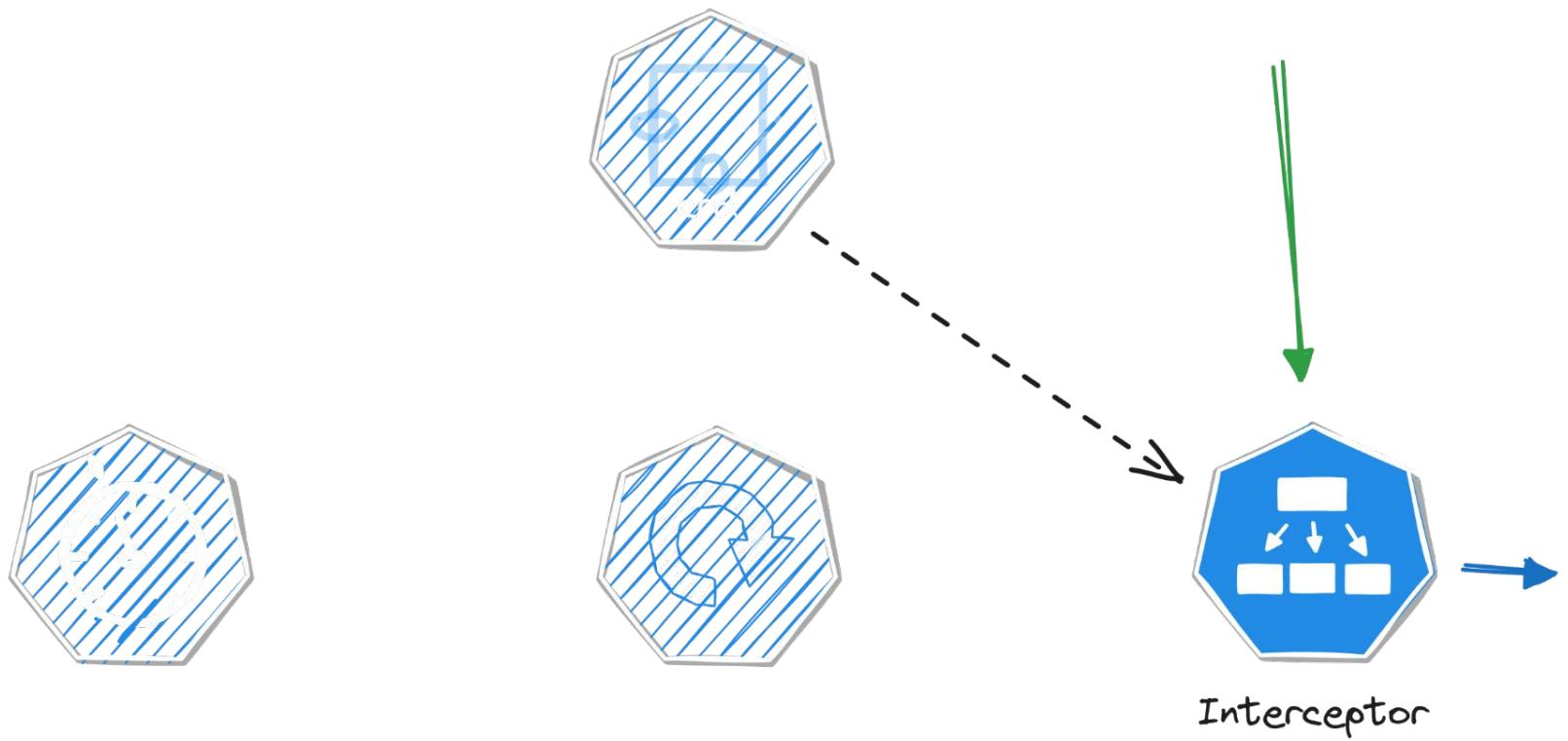
Interceptor

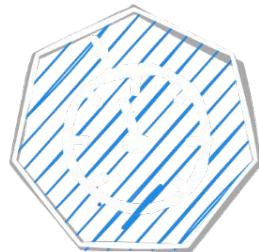
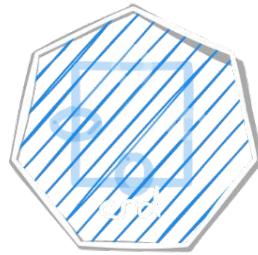
HTTPScaledObject



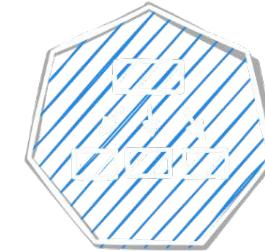


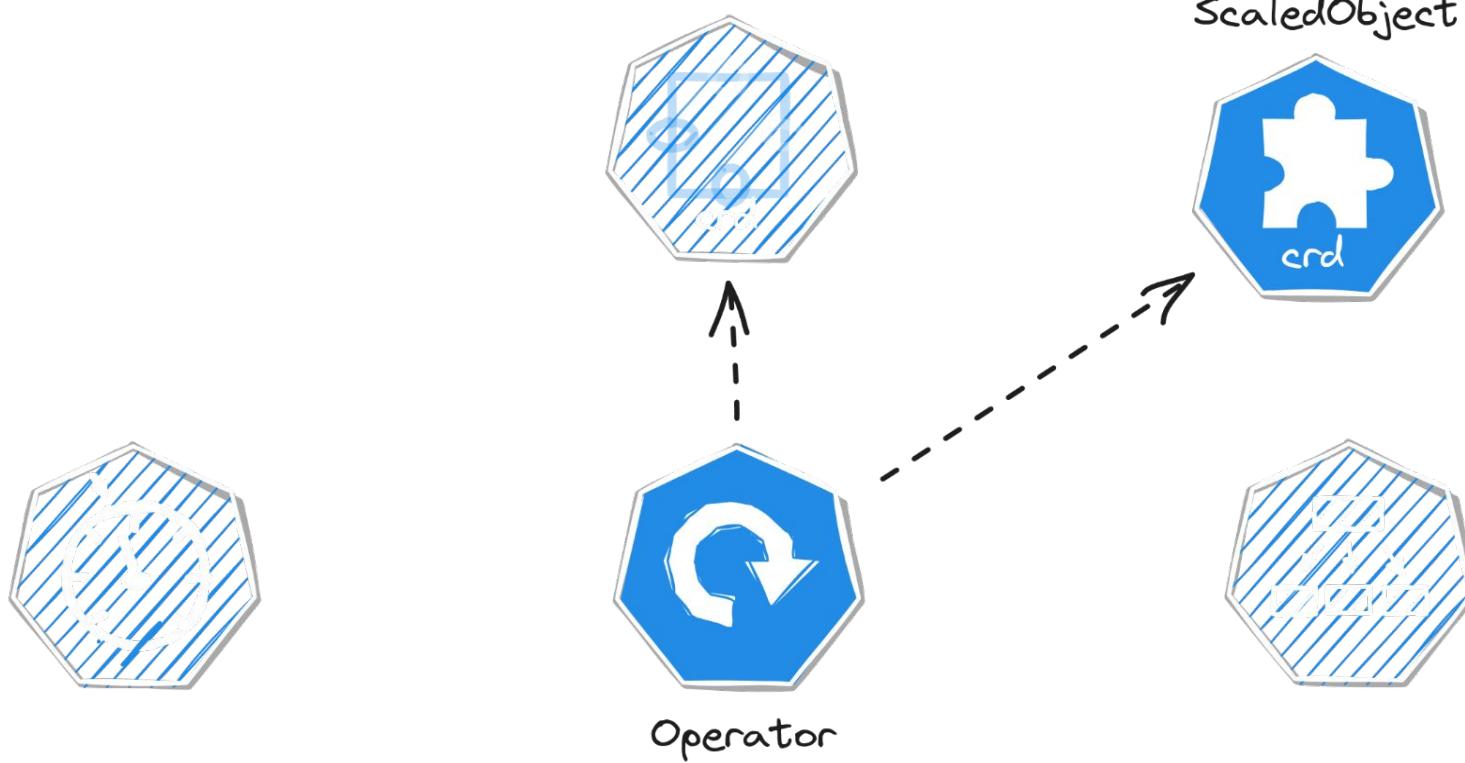
Interceptor





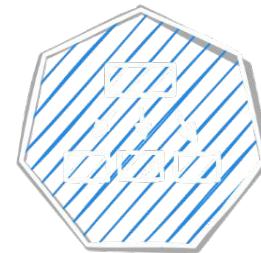
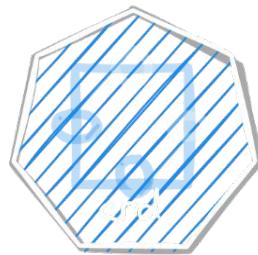
Operator





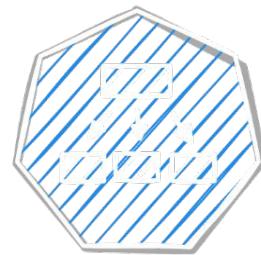
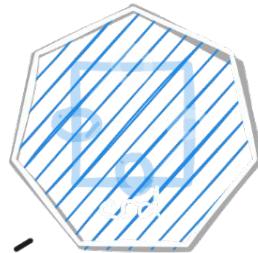


Scaler

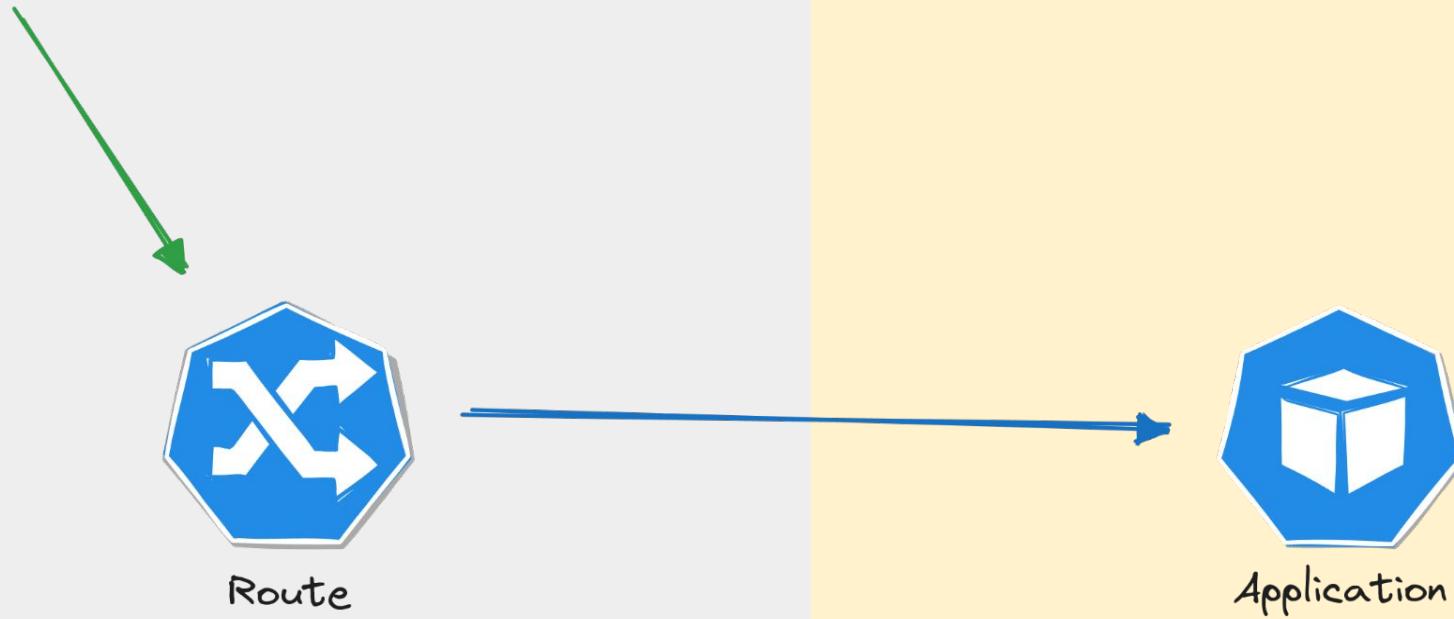


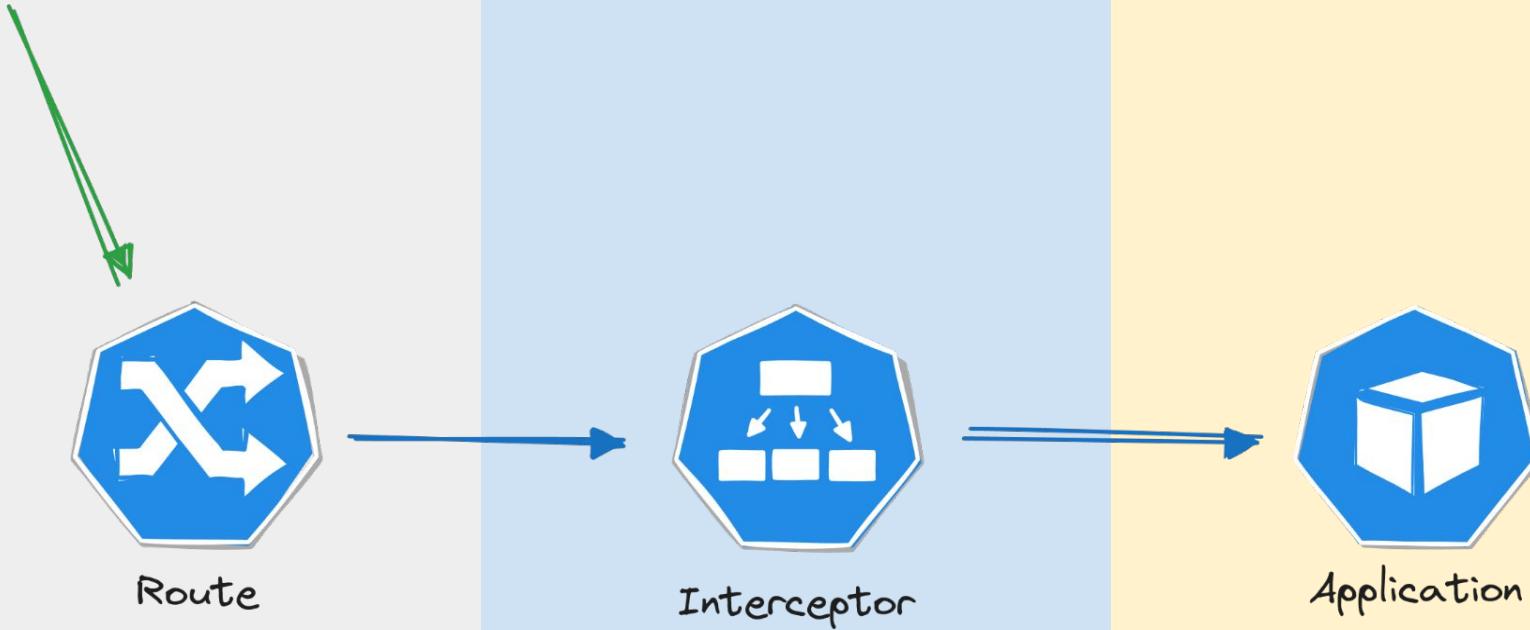


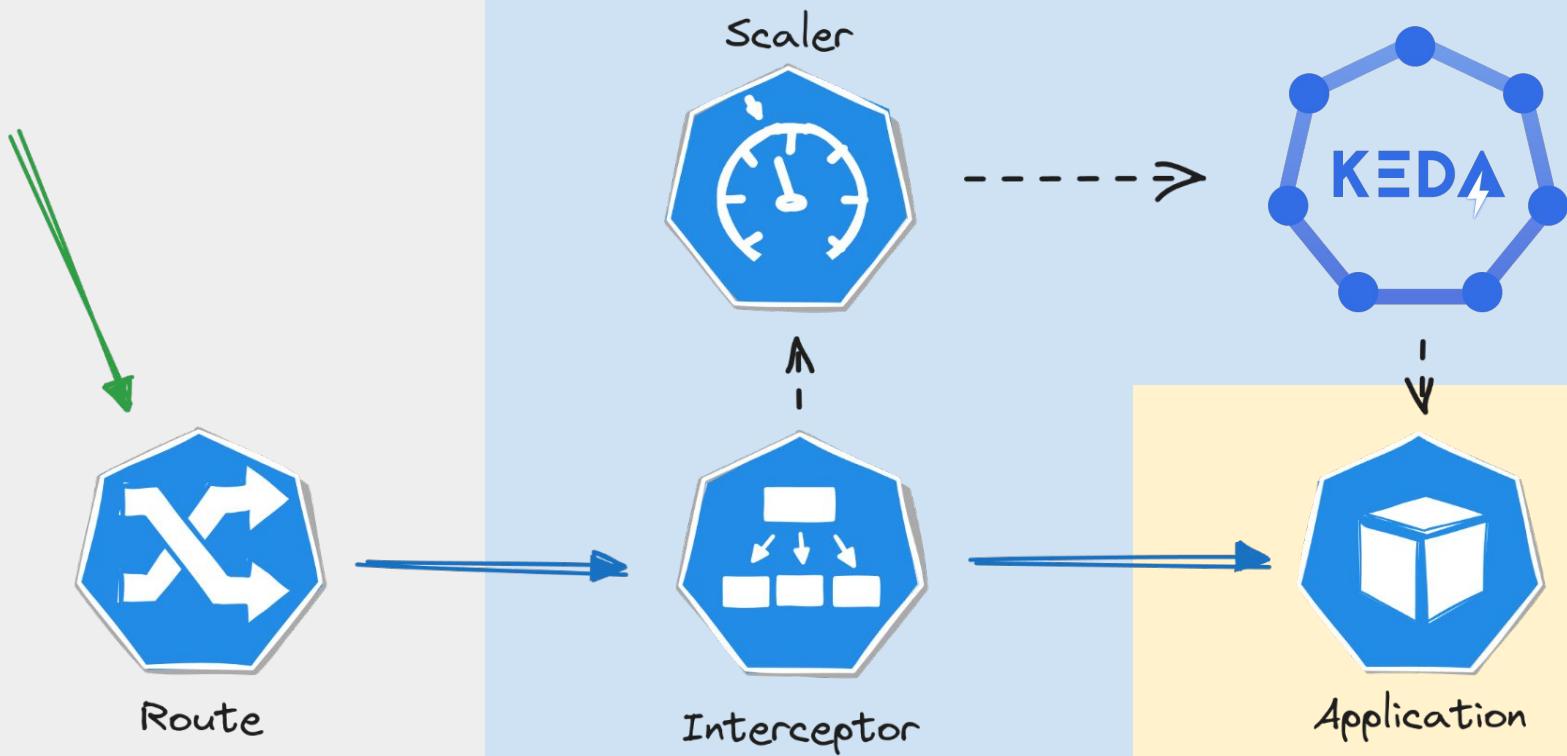
Scaler



Autoscaling



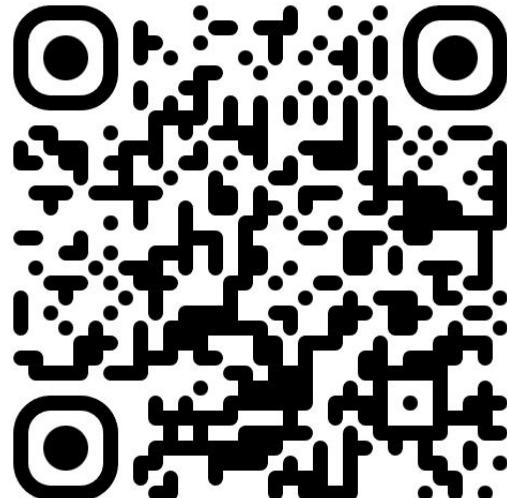




presentation



github.com



killercoda

