A cloud native Kubernetes Global Balancer

Introduction to k8gb

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This slide deck: bit.do/fosdem-k8gb
Outline

1. High-lvl Description
   - Animation

2. Animation
   - Components

3. Demo
Animation

- TTL implications
- Trade-off
- Animation created in Manim, available at https://github.com/k8gb-io/k8gb-manim
Components

- CoreDNS
- ExternalDNS
- Kubernetes controller
- Bundled together and deployed by Helm chart
CoreDNS

- Own plugin
- DNSEndpoint - Custom Resource
- Based on k8s_external plugin
- k8gb keeps updating the internal DNS records
K8s way to update the external edge DNS server
- Supports majority of cloud providers
- Also works with DNSEndpoint
- k8gb updates the records on the edge dns level
- No SPoF except the edge dns server, contains also TXT record with heart beats
k8gb - the controller/operator

- Golang
- Acts on `gs1b` Custom Resource
- or alternatively on custom annotation on Ingress resource
- Based on KubeBuilder - Operator SDK
- Started by Yury Tsarev
apiVersion: k8gb.absa.oss/v1beta1
kind: Gslb
metadata:
  name: test-gslb-failover
  namespace: test-gslb
spec:
ingress:
  rules:
  - host: failover.cloud.example.com
    http:
      paths:
      - backend:
          serviceName: frontend-podinfo
          servicePort: http
          path: /

strategy:
type: failover
primaryGeoTag: eu
gist with all the commands: bit.do/fosdemo22
Summary

- DNS based load balancing
- Contribution is welcome, we are on Slack
- k8gb ☽ GitOps
End

k8gb.io

github.com/k8gb-io/k8gb