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CloudNativeCon

North America 2024

Enhancing K8GB with Arbitrary Network Resource Integrations

K8GB Contribfest

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Show of hands I



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 Have you ever heard of K8GB?

 Have you ever used K8GB?

👋 Have you ever contributed to K8GB?



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K8GB Intro

K8GB Contribfest

K8GB - Kubernetes Global Balancer

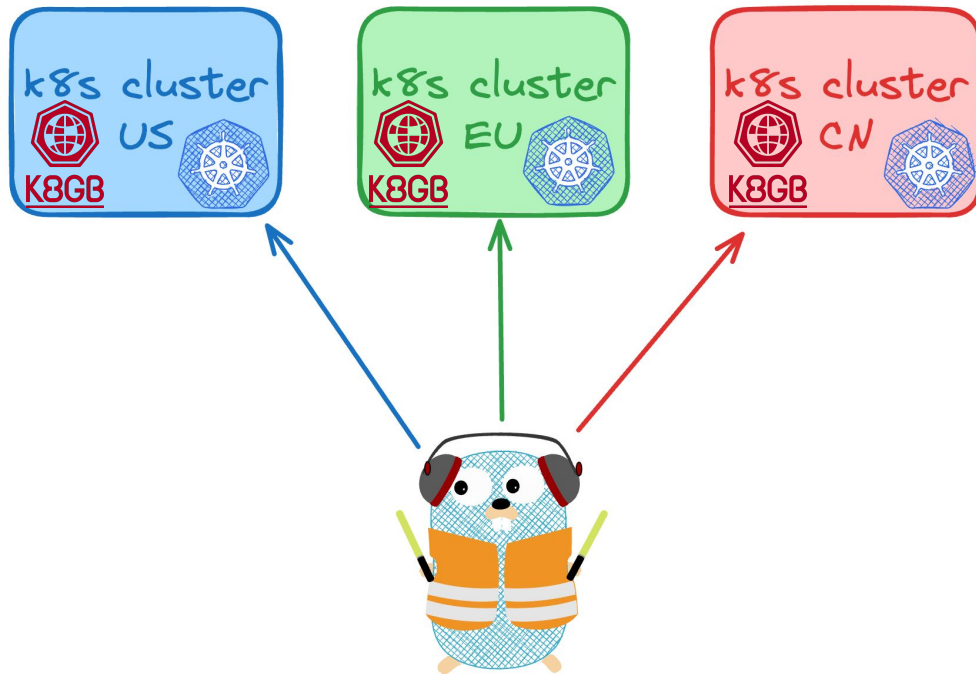


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- 🌐 Application resilience across multiple Kubernetes clusters and regions
- ⚙️ Seamless traffic management with multiple load balancing strategies
- 🛡️ No single point of failure and no management cluster
- 🔧 Simple control with a single Custom Resource
- 📈 Backed by a community and trusted by enterprises

<https://www.k8gb.io/>



K8GB - Simple Gslb Custom Resource



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```
apiVersion: k8gb.absa.oss/v1beta1
kind: Gslb
metadata:
  name: test-gslb-failover
  namespace: test-gslb
spec:
  resourceRef:
    apiVersion: networking.k8s.io/v1
    kind: Ingress
    matchLabels:
      app: test-gslb-failover
  strategy:
    type: failover
    primaryGeoTag: us-west
```



K8GB - Simple Gslb Custom Resource



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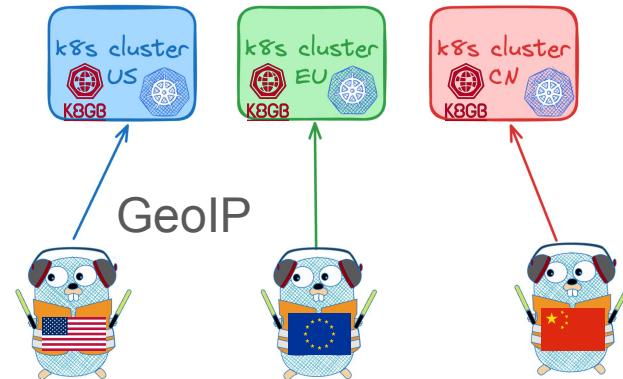
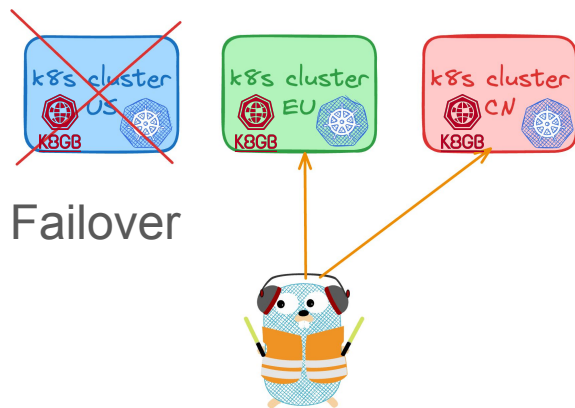
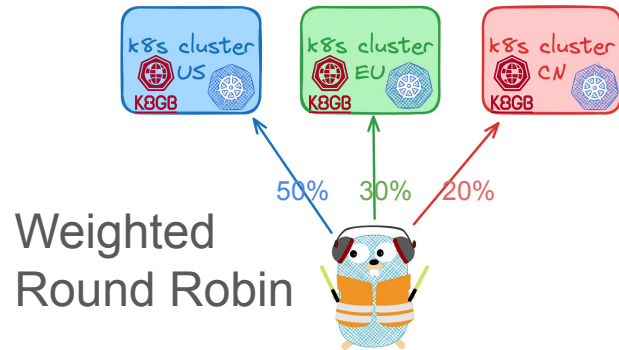
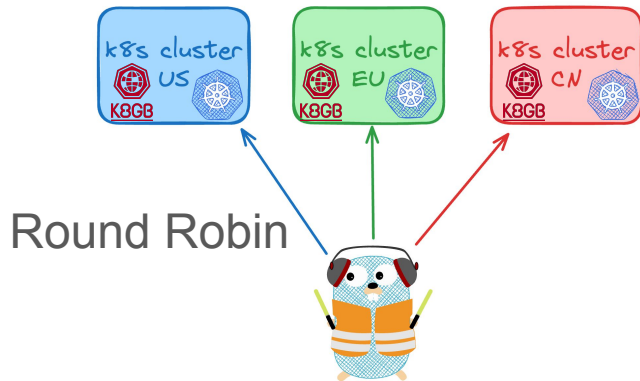
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```
apiVersion: k8gb.absa.oss/v1beta1
kind: Gslb
metadata:
  name: test-gslb-failover
  namespace: test-gslb
spec:
  resourceRef:
    apiVersion: networking.istio.io/v1
    kind: VirtualService
    matchLabels:
      app: test-gslb-failover
  strategy:
    type: failover
    primaryGeoTag: us-west
```



K8GB - Global Load Balancing Strategies





Embedded custom CoreDNS serves DNS requests

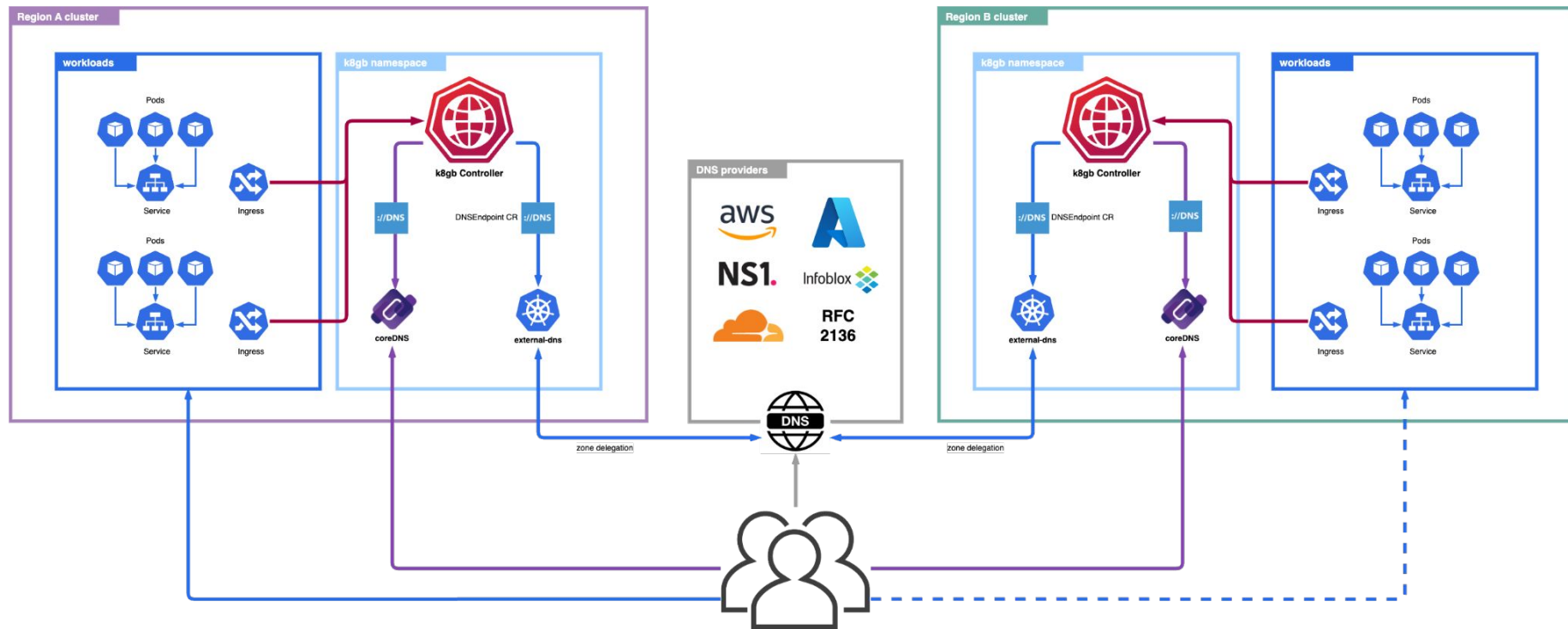


Integrated ExternalDNS automates configuration of Zone Delegation



K8GB controller coordinates the logic according to the GSLB strategy

K8GB - Full Architecture



 K8GB is architected to run on top of **any CNCF-conformant K8s cluster** and Ingress controller, Istio Virtual Service, GatewayAPI is on the roadmap

- ✓ Operates in any **on-prem, cloud or hybrid** scenarios
- ✓ Supported external DNS providers for **full zone delegation** automation:

- ✓ AWS Route53

- ✓ Azure Public DNS

- ✓ NS1

- ✓ Infoblox

- ✓ Cloudflare

- ✓ RFC2136 implementations (e.g. Bind/Windows DNS)



NS1.



**RFC
2136**

✓ CNCF Sandbox

✓ Applied for Incubating

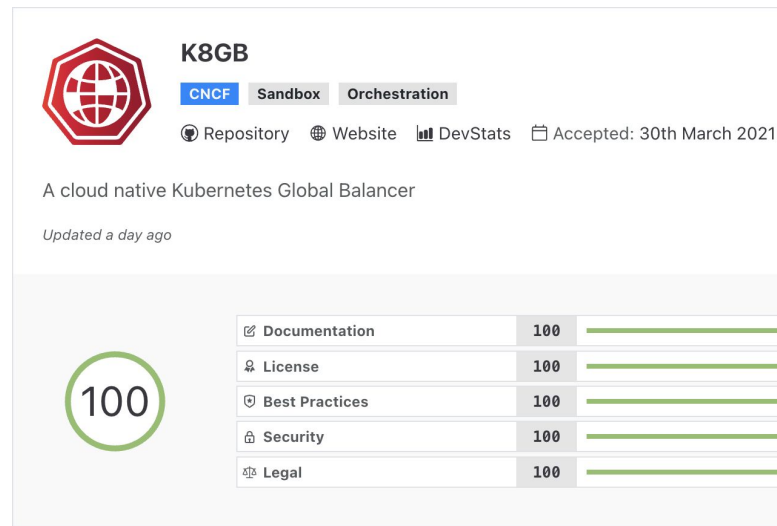
✓ **5 public adopters:** Absa, Millennium bcp, Eficode, Open Systems, PagBank

✓ 2 times finalist of **CNCF Security Slam**

✓ Perfect **CLOMonitor** [score](#)

✓ Maintainers from Absa, Upbound, Kedify

✓ Contributors from Millennium bcp, Tetrade, D2iQ



K8GB

CNCF Sandbox Orchestration

Repository Website DevStats Accepted: 30th March 2021

A cloud native Kubernetes Global Balancer

Updated a day ago

100

Documentation	100	100%
License	100	100%
Best Practices	100	100%
Security	100	100%
Legal	100	100%



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Contributing to K8GB

K8GB Contribfest

Contribution flow

Navigating the codebase

Getting familiar with the project codebase

Preparing the change

Crafting the code change

Unit Testing

Getting familiar with the project Test Automation

Unit test suite

E2E Testing

Setup Local Multi-Cluster environment

E2E test suite

Pull Request

Preparing the change for review.

Evaluating the CI/CD pipeline feedback.

Exercise - Extend Ingress Integration

1. Navigate to our Github page: <https://github.com/k8gb-io/k8gb>
2. Fork the repo
3. Clone your fork to your local machine
4. Checkout the branch contribfest/na2024
5. Navigate to the README under [k8gb/contribfest/na2024](https://github.com/k8gb-io/k8gb/tree/main/contribfest/na2024)

Thank you!



Give us feedback on the session!



🌐 Visit us at k8gb.io!

★ Star us on [GitHub](https://github.com)!