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SIG-Network Intro

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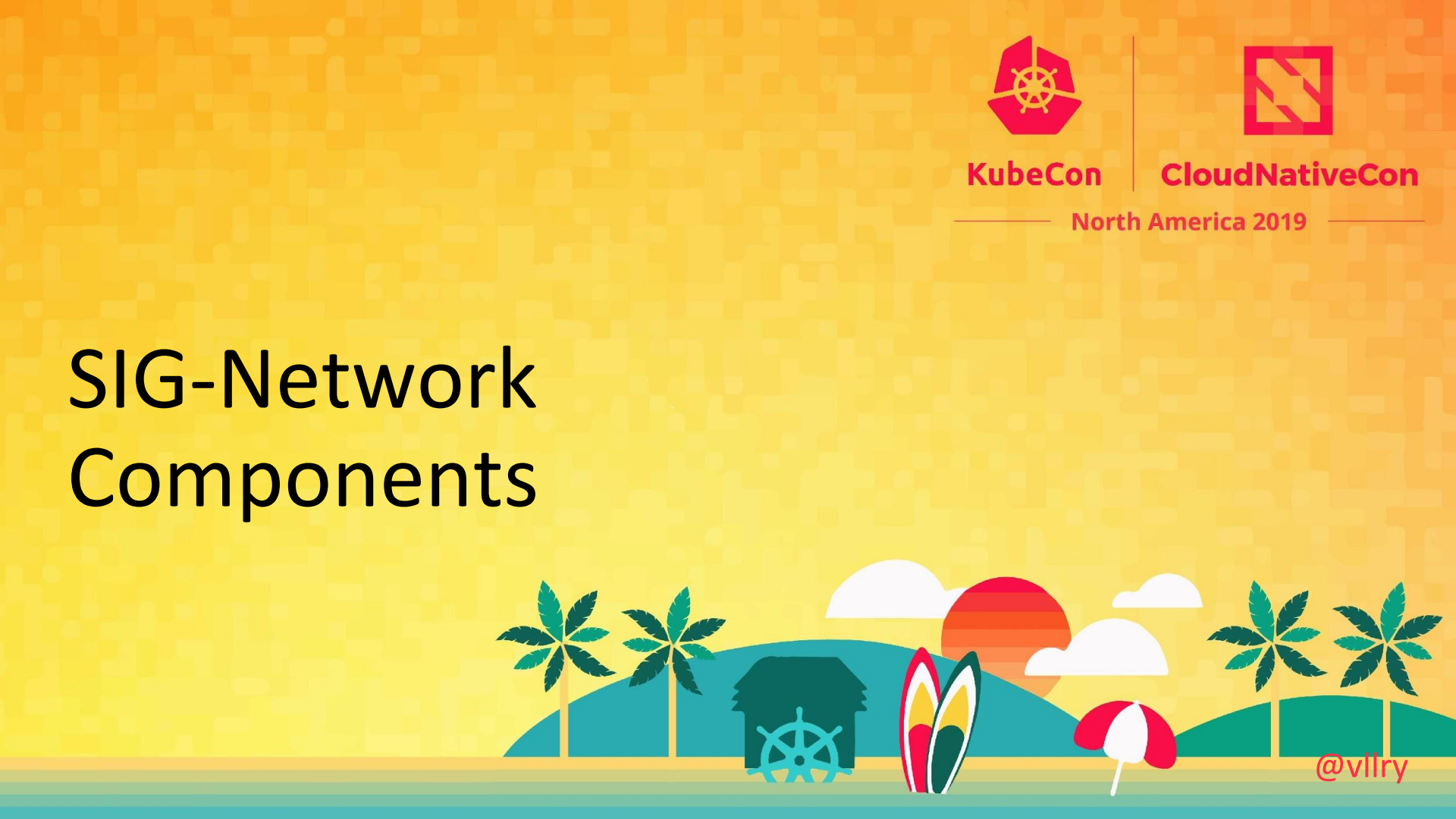
SIG-Network Scope

“SIG Network is responsible for the components, interfaces, and APIs which expose networking capabilities to Kubernetes users and workloads.”

SIG-Network Scope

- Networking control plane and data paths.
- Network service abstractions.
- Service discovery (DNS).
- Service load balancing (L4, L7).
- Network security and identity.
- Cluster connectivity.
- Cross-cutting concerns such as scalability.
- Metrics and monitoring associated with networking components.



SIG-Network Components

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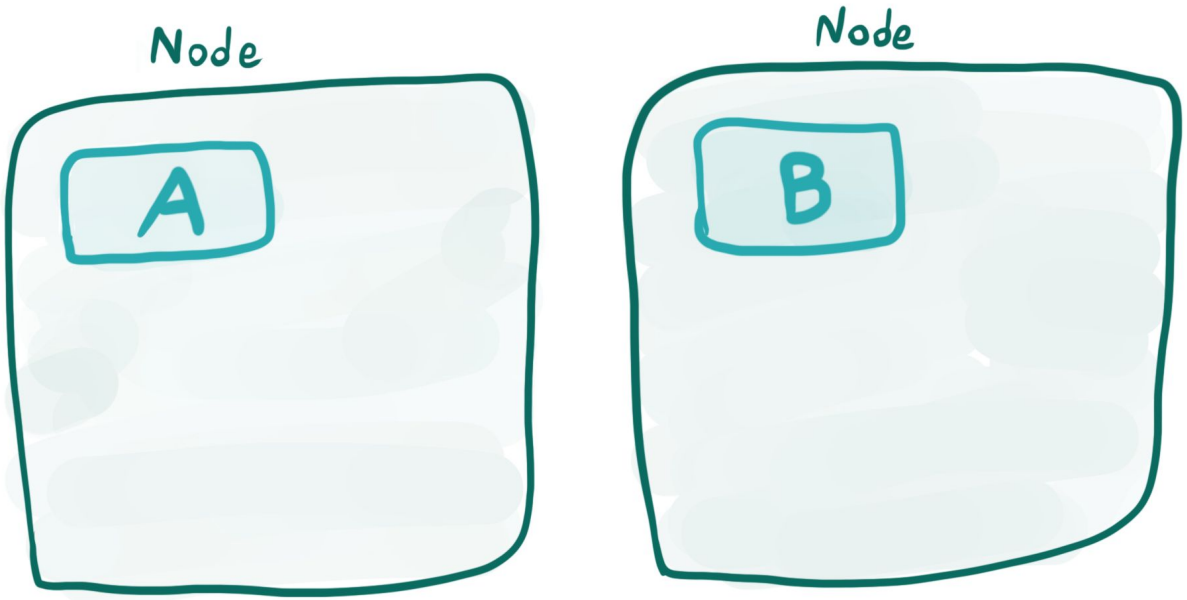

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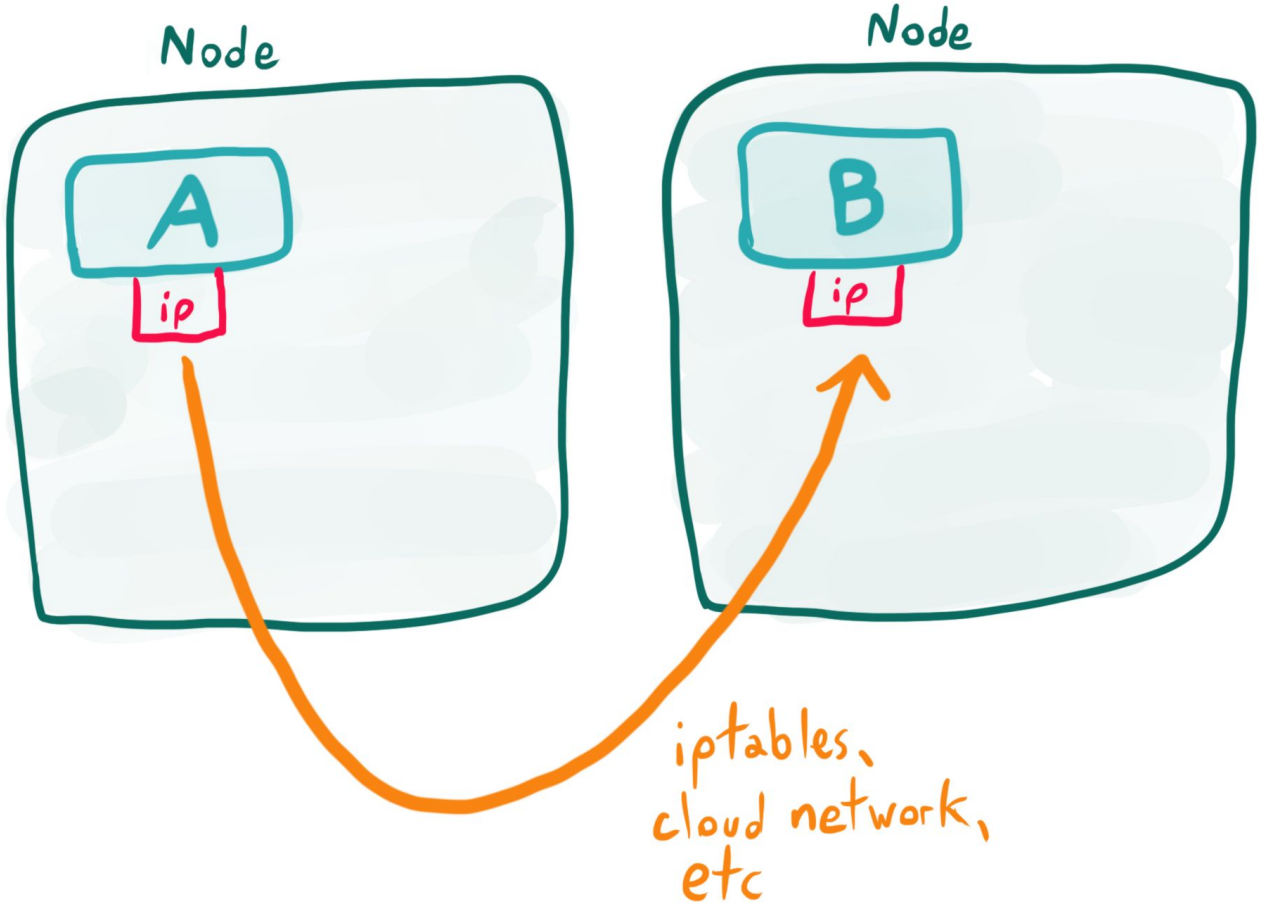

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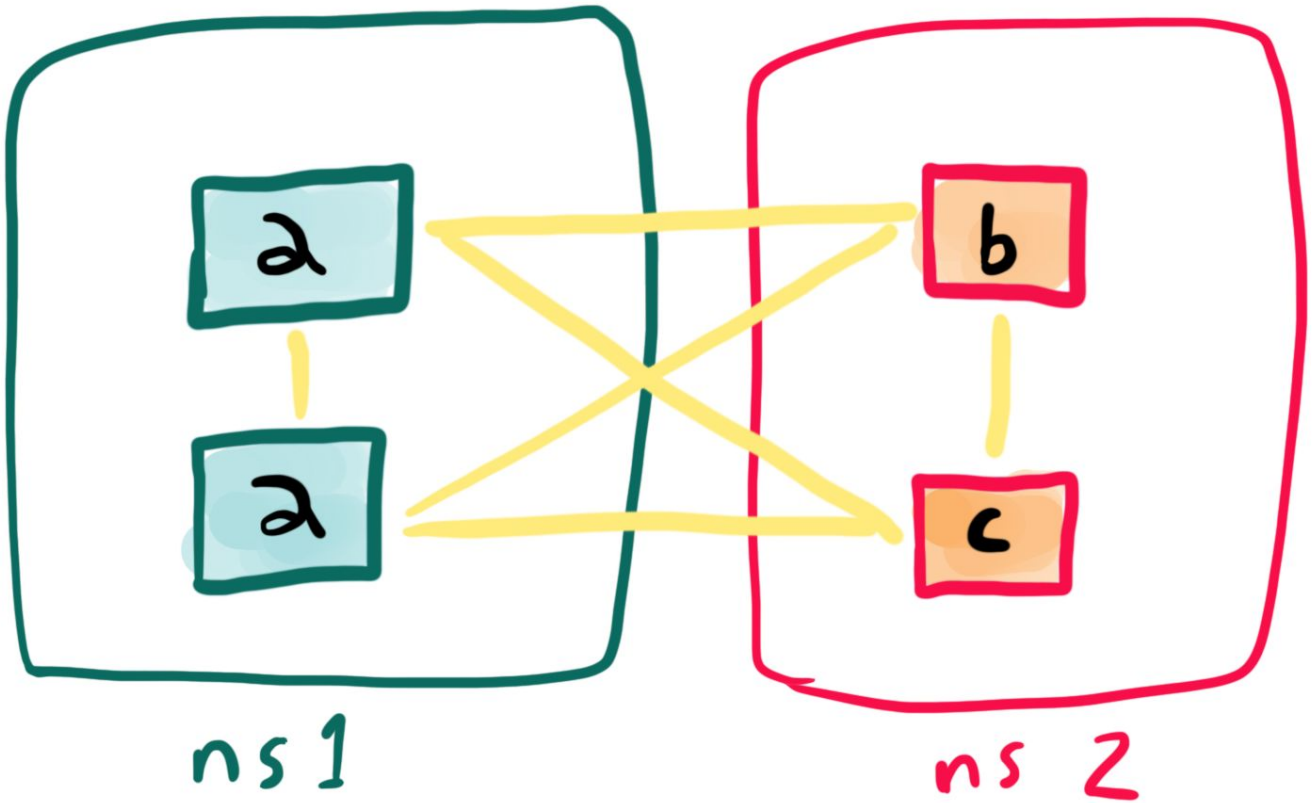
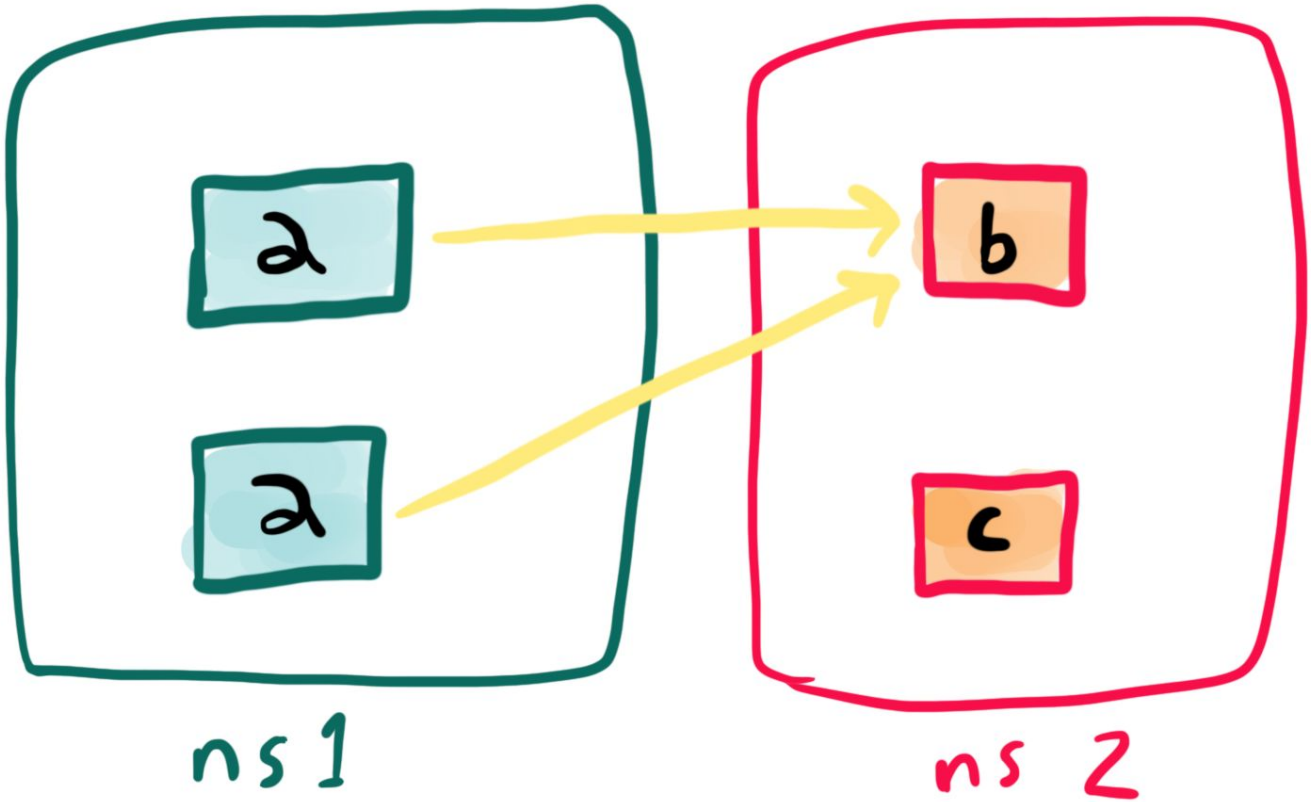

a
a
b
c
ns 1
ns 2

NetworkPolicy - Deny All Ingress


```
kind: NetworkPolicy
apiVersion: networking.k8s.io/v1
metadata:
  name: ingress-deny-all
spec:
  podSelector:
    matchLabels:
      app: a
  ingress: []
```

NetworkPolicy - Limited Ingress


```
...
 spec:
   podSelector:
     matchLabels:
       app: b
   ingress:
     - from:
       - namespaceSelector:
           matchLabels:
             team: a
         podSelector:
           matchLabels:
             app: a
```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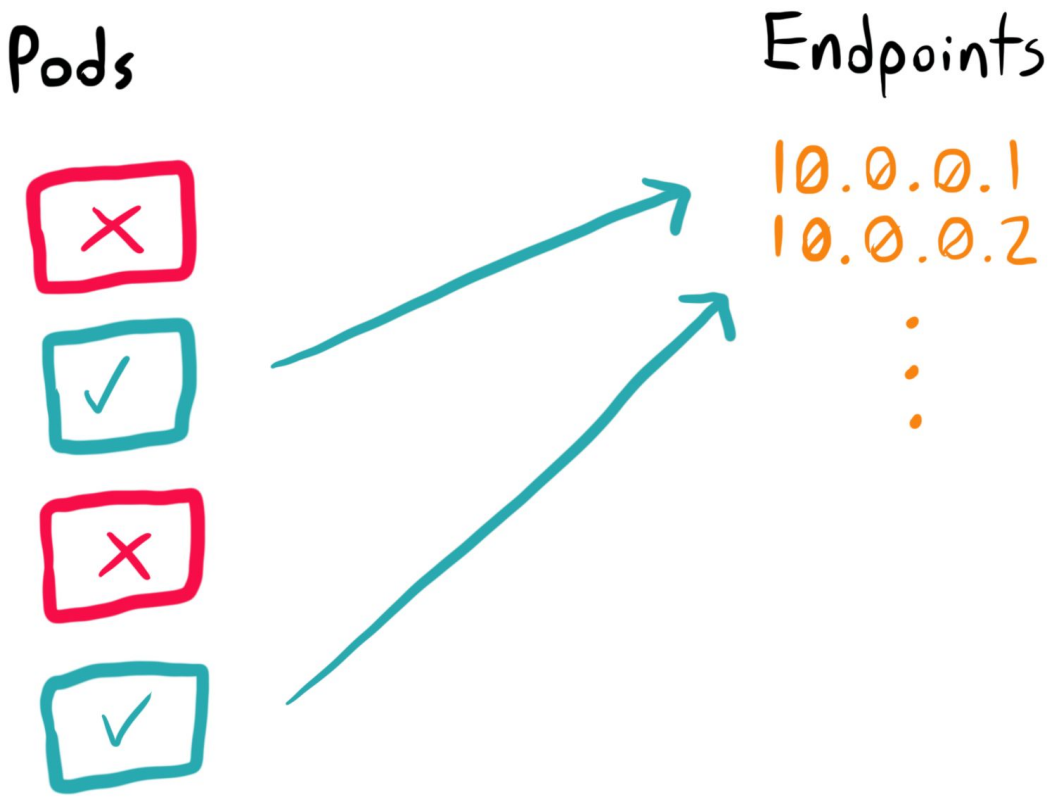
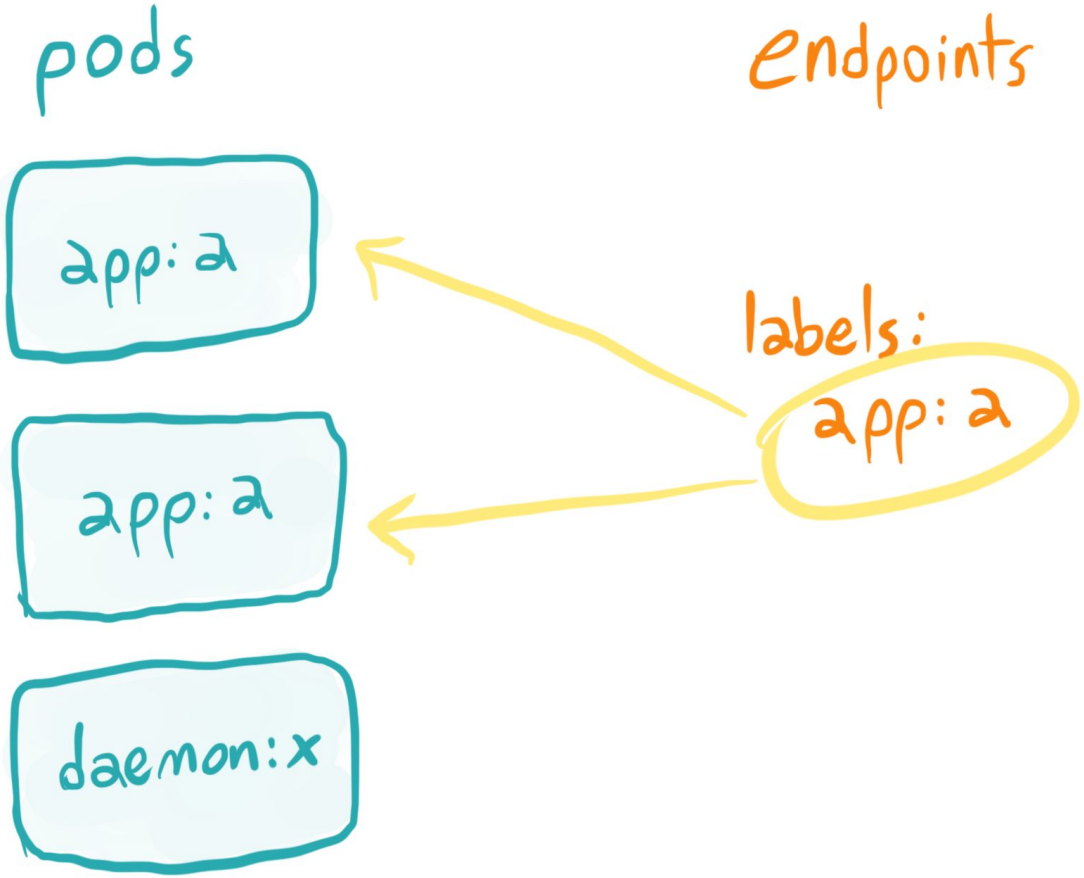

Pods
Endpoints
10.0.0.1
10.0.0.2



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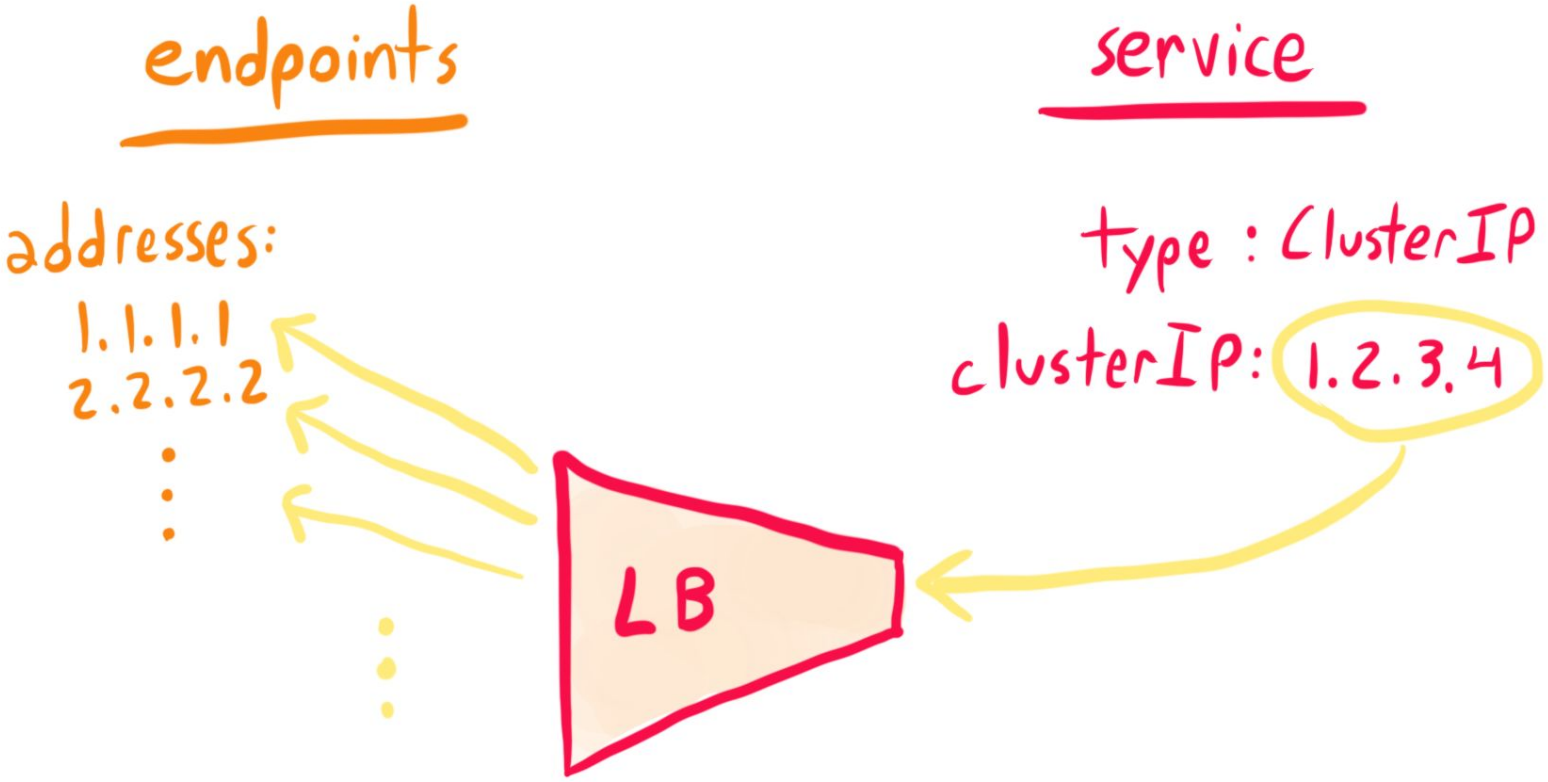
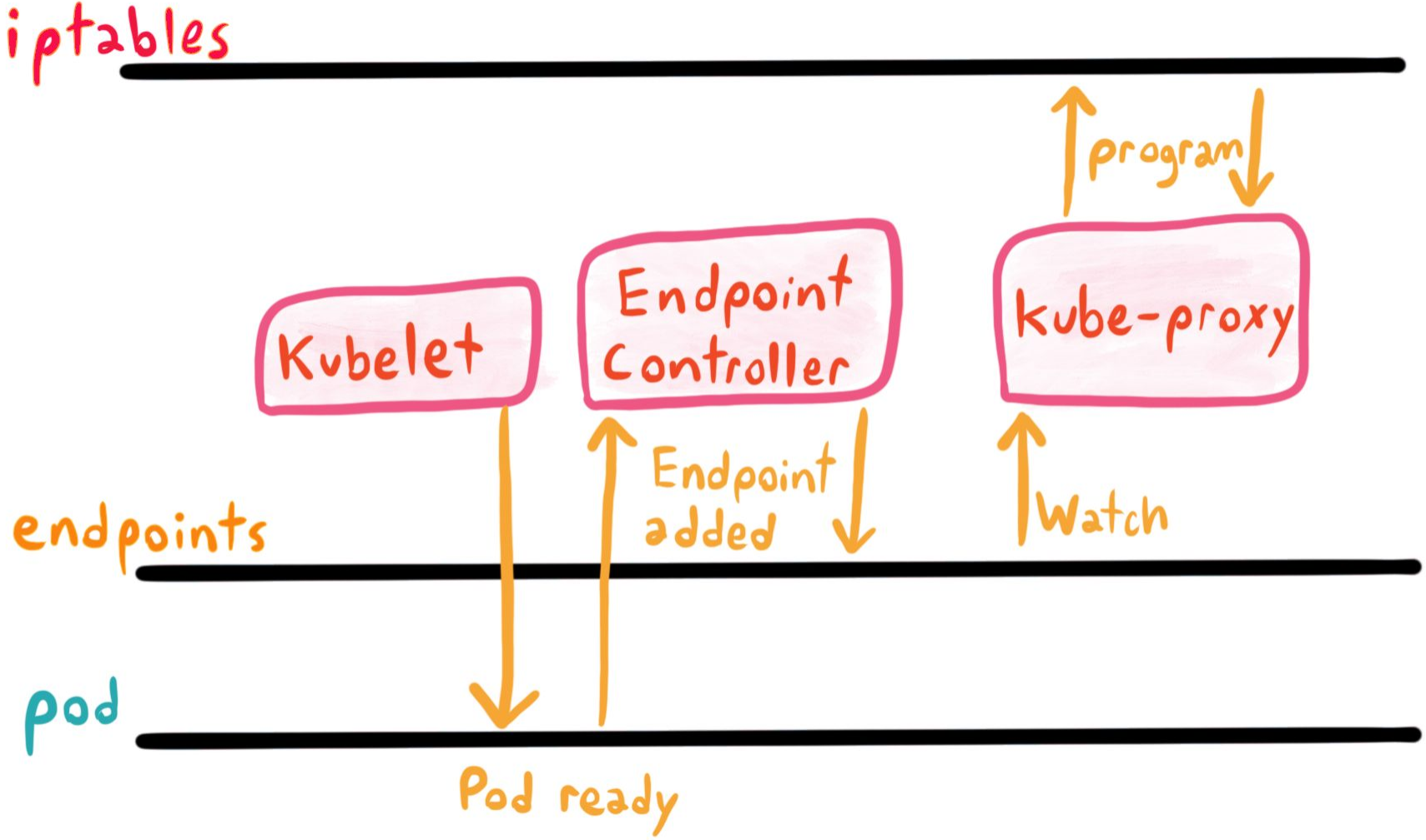
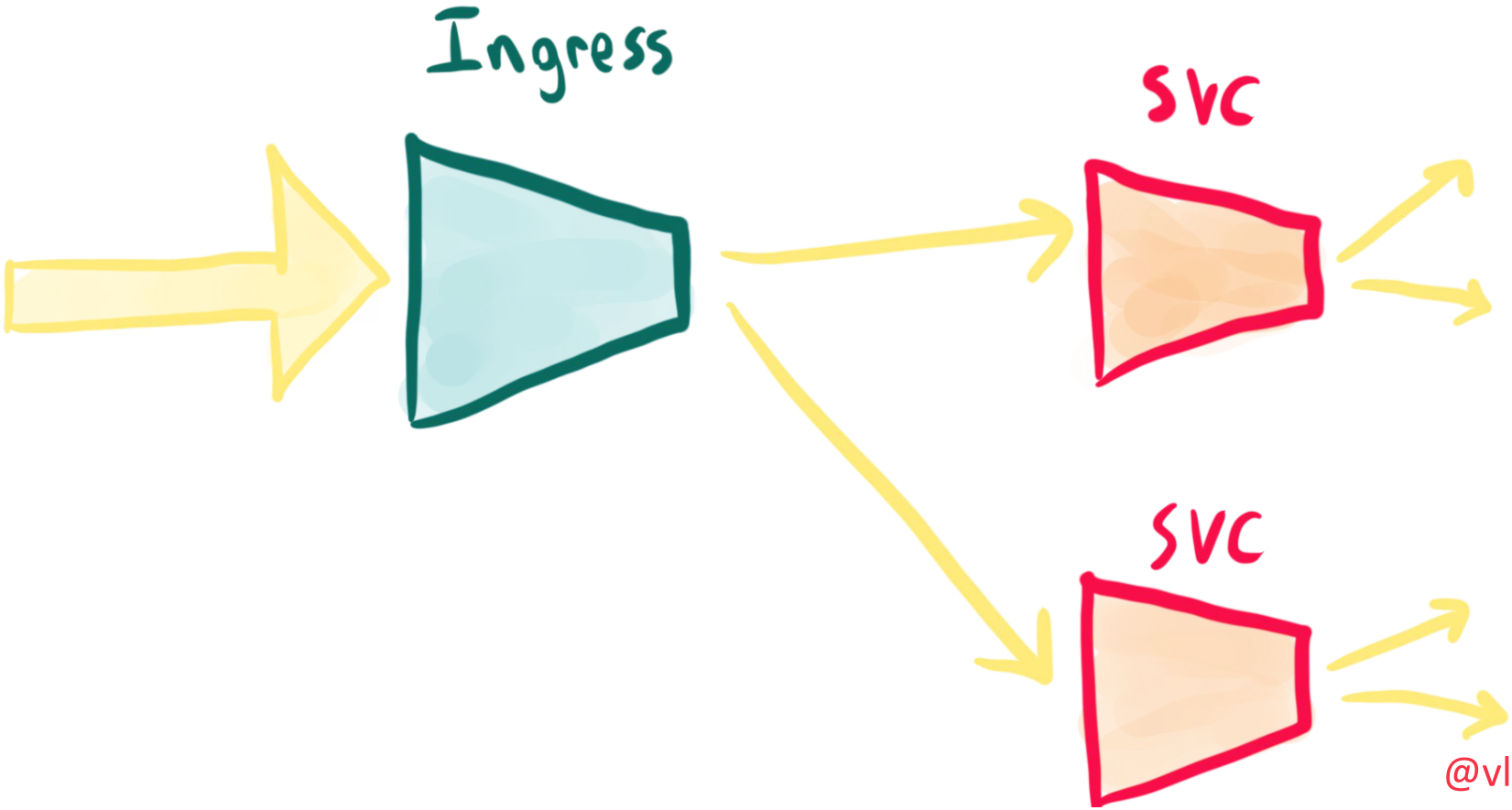

endpoints
addresses:
1.1.1.1
2.2.2.2
service
type : ClusterIP
clusterIP: 1.2.3.4
LB


iptables
program
Kubelet
Endpoint Controller
kube-proxy
Endpoint added
Watch
endpoints
pod
Pod ready


Ingress
SVC
SVC
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```
spec:
  rules:
  - http:
      paths:
      - path: /
        backend:
          serviceName: main
           servicePort: 80
      - path: /api
        backend:
          serviceName: api
           servicePort: 80
```

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KubeCon
CloudNativeCon
North America 2019
Recent & Upcoming Work
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Recent

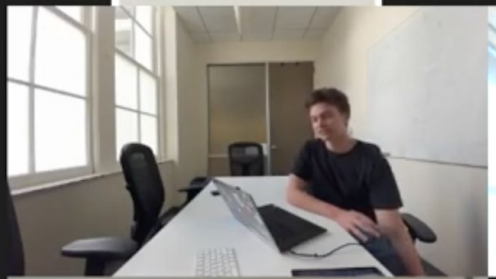
- IPv4 / IPv6 dualstack.
- Endpoint Slice.

Upcoming

- Ingress GA
- Multicluster networking

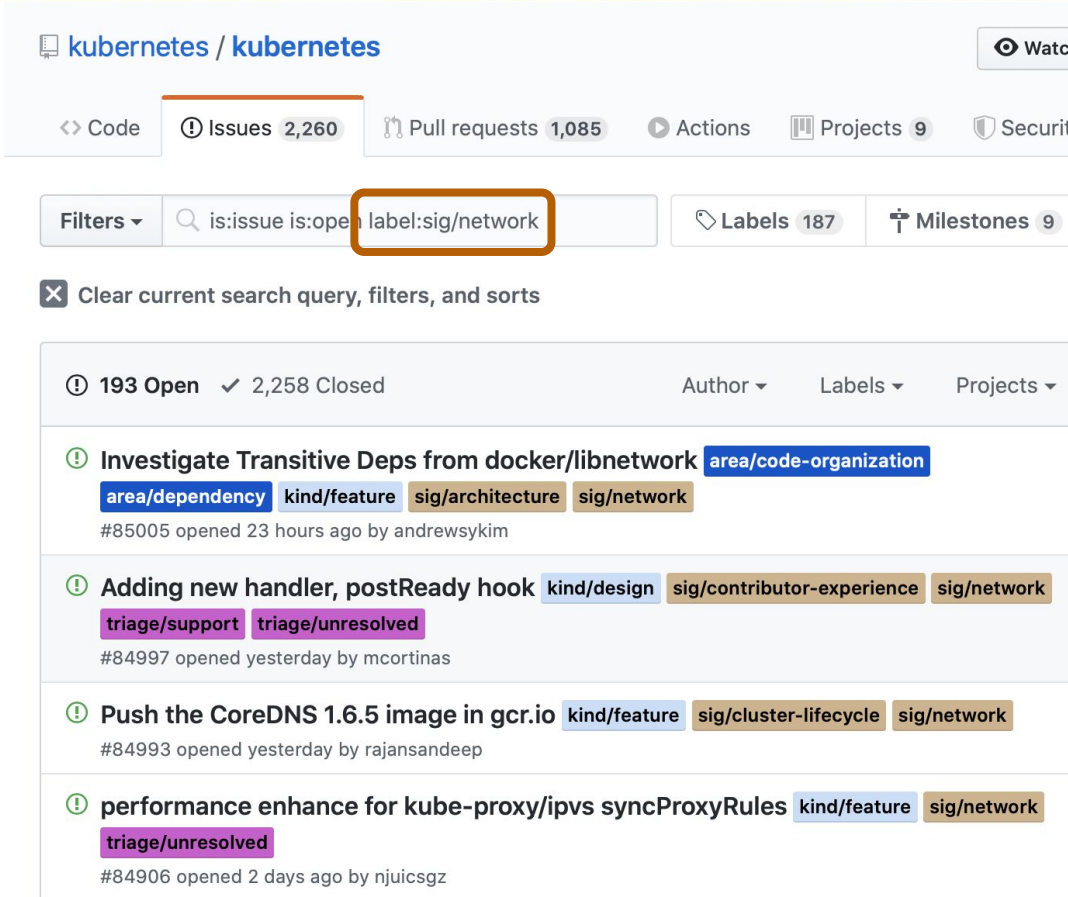
Get Involved

- Join the SIG-Network mailing list and Slack channel to discuss current and future work.
- Attend bi-weekly conference calls.



Get Involved

- Find issues and PRs on Github.
- Help assess/review.
- Take on issues!
  - Start small.



Find Us

- github.com/kubernetes/community/tree/master/sig-network

- Mailing list: kubernetes-sig-network@googlegroups.com
- Slack: #sig-network on slack.k8s.io