

# Somewhat Advanced Traffic Management

When you realise you need to go multi-cluster

## John Keates

- **Platform engineering**  
at Wehkamp Retail Group
- **Consultancy** to keep things fresh
- **DevOps Culture & Cloud Architecture**

@johnkeates pretty much everywhere  
(CNCF/Istio/K8S Slack, GitHub, Mastodon etc.)



# Wehkamp facts

Focus on: fashion // living // beauty // baby & kids

**5.259.335**  
products

**2.300.000**  
active customers

**552 million**  
Sales  
23/24

**44%**  
app orders

**948**  
headcount

**>11 million**  
packages  
delivered

**~ 50.000**  
returns per day  
processed

**3.864 brands**

WE Fashion // Vingino // Mango // Tommy Hilfiger // Scotch & Soda // ONLY // Private Label  
wehkamp home // HK living // Woood // Zuiver // Riverdale // House Doctor



DEDEMSVAART, Wehkamp's Fabriekskantoor



# 4 SLOPEN OP ZICHT

LINNEN - UITZETTEN  
COMPLEET OP ZICHT

Wehkamp's

Wij praten niet lang. Op ónze kosten krijgt u de complete uitzet op zicht. Terug op onze kosten als Wehkamp geen eerste klas kantoor is. Maar 1000 tegen stuurt u niets terug. Want tienduizenden gezinnen voordeelen alles zo rijk, zo goed en zo voordelig dat ze daar wel voor oppassen. Geen huurcontract. Vertrouw! « Crescendo » in driemaal, « Butterfly » in achtaal en « Gala Première » in twaalfmaal betaalbaar, de laatste twee uitzettten met maar 1/2 % rente per maand. Bij betaling in eens: 3 % korting.

Deze uitzettten zijn 30, 40 en 80 gulden lager in prijs dan in de winkel. Dit komt door onze enorme omzet in innenuitzettten!

BESTELNR O 300

**« CRESCEDO »**

Inhoud :

- 2 geborduurde lakens 180 x 240 cm.
- 2 gladde lakens 180 x 240 cm.
- 4 geborduurde slopen (CADEAU) 62 x 72 cm.  
theedoeken 63 x 63 cm.
- 6 wafelkeukendoeken, de sterren.
- 4 badstof keukendoeken, lang schoonblijvend.
- dubbeldeks baddoeken, heerlijk zacht.
- 1 poplin handdoek, ruime opening.
- 6 flossellen stoofdoeken (extra sterk).
- 1 extra kwaliteit modern ontbijttafelken, vrolijk dessin.
- 1 wit damasten tafellaken, voorname, 130 x 160 cm.
- 4 luxueuze servetten, van wit damast.
- 4 damessakdoekjes, van poplin.
- 4 supersterke messendessjies.
- 4 super theedoeken (droogwonder).

56 stuks Normale prijs f 129,10

nu f 99,—

met 1-persoons lakens, 150 cm. breed f 95,40

Met 10 jaar Fabrieksgarantie op lakens en slopen.

BESTELNR O 300

**« GALA PREMIERE »**

- 6 luxe lakens, zonder pap. Zwitser borduurmotief, 180 x 240.
- 6 gezoemde gladde lakens zonder pap 180 x 240.
- 12 bijpassende Zwitser geborduurde slopen 62 x 72.
- 6 linnen glazendoekjes.
- 6 sneldrogende theedoeken grote maat 70 x 72.
- 12 wafel keukendoeken, nergens beter.
- 6 linnen vaatdoeken « Goudmerk ».
- 6 dubbeldeks baddoeken keukendoeken « Princess ».
- 6 bijpassende panlappen.
- 6 zwarte moderne luxe baddoeken, « Indanthren ».
- 6 luxueuze wascombinatie stofdoeken.
- 15 prachtige wascombinatie stofdoeken, royale maat. messendessjies, extra sterk.
- 1 moderne ontbijttafelken, fantastisch mooi.
- 1 luxe ontbijttafel, gekleurd damast 130 x 160 met 4 servetten.
- 1 satijndamast tafellaken, glanshoudend, grote maat 150 x 200.
- 6 bijpassende satijndamast servetten.
- 2 satijndamast tafellaken, glanshoudend 130 x 160.
- 12 luxe damessakdoekjes, extra gemerceriseerd.
- 2 luxe flanelen Wolanta-lakens 170 x 220.

109 st. f 199,60 of 31,60 + 7 X 24,—

Met 1-persoons lakens 150 breed : f 190,60

Met 10 jaar Fabrieksgarantie op lakens en slopen.

2 wit damast tafellakens « Carmen » 130 x 160.

1 wit damast tafellaken in superklasse 150 x 200.

12 luxe poplin dameszakdoekjes, extra gemerceriseerd.

1 moderne wollen blokdeker (2-pers.) catalogusprijs.

157 stuks f 385,80

of 58,55 + 11 X 29,75

Met 1-persoons lakens 150 breed :

f 367,80

Met 10 jaar Fabrieksgarantie op lakens en slopen.

Alles even sterk. Zonder pap.

Lakengaren b.v.: ketting

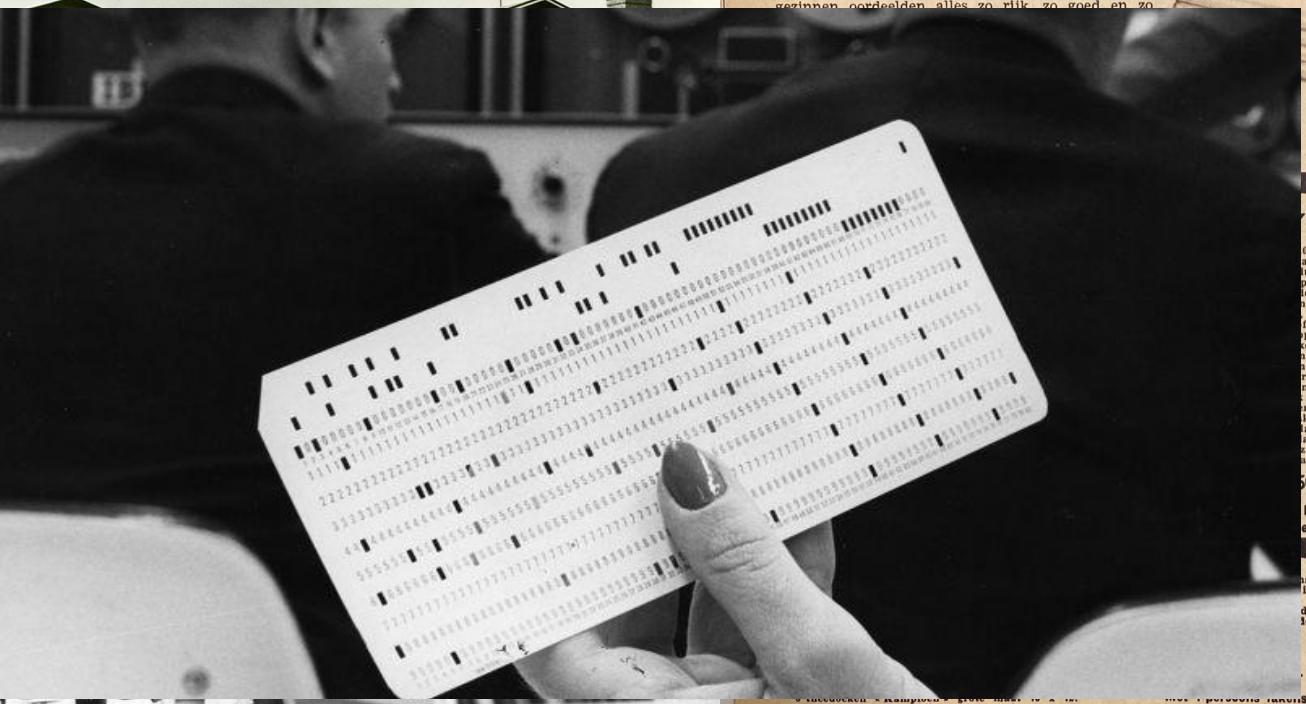
61 kg, inslag 64 kg trek-

sterkte.

De uitzettten zijn afge-

stemd op normale

gezinshoeften.



**4 SLOPEN**

LINNEN - UITZETTEN  
COMPLEET OP ZICHT

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» met 6 lakens en 6 slopen, rijk geborduurd, goedgekeurd door de Ver. van Nederl. Huisvrouwen.  
60 % graslinnen lakens 180 x 240.  
an dezelfde slopen 62 x 72.  
plaatselijke maat 70 x 72.  
slopen 63 x 63.  
n, nergens voordeleger.  
f Goudmerk.  
f keukendoeken « Princess ».  
open doeken.  
baddoeken « Indanthren ».  
ndjes.  
normale stofdoeken, royale maat.  
ra sterk.  
n, fantastisch mooi.  
gekleurd damast 130 x 160 met rijstpatroon.  
ken, glanshouwend, grote maat 150 x 200.  
damast servetten.  
lakens, glanshouwend 130 x 160.  
sokken, extra gemerceerd.  
anta-lakens 170 x 220.

**60 of 31,60 + 7 X 24,—**

**lakens 150 breed : f 190,60**

**garantie op lakens en slopen.**

lakens « Carmen » 130 x 160.  
In dezelfde superklasse 150 x 200.

doekjes, extra gemerceerd.  
laken (2-pers.) catalogusprijs.

**f 385,80**

**11 X 29,75**

**lakens 150 breed :**

**f 367,80**

Met 10 jaar Fabrieksgarantie op lakens en slopen.  
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De uitzetten zijn afgesteld  
op normale  
gezinshoeften.

W.  
G.  
R



W.  
G.R

On a previous episode of IstioDay, ArgoCon or KCD...



- 1. No local state**
- 2. No remote shells**
- 3. No external listeners**
- 4. Your process might get killed**

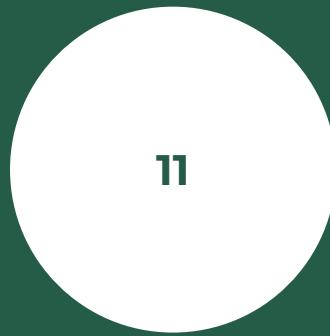


- 1. We'll send you traffic**
- 2. We'll authenticate it**
- 3. We'll scrape your metrics**
- 4. We'll gather your logs**
- 5. We'll restart you if you crash**
- 6. Deploy as much as you want**





**Services**



**Teams**

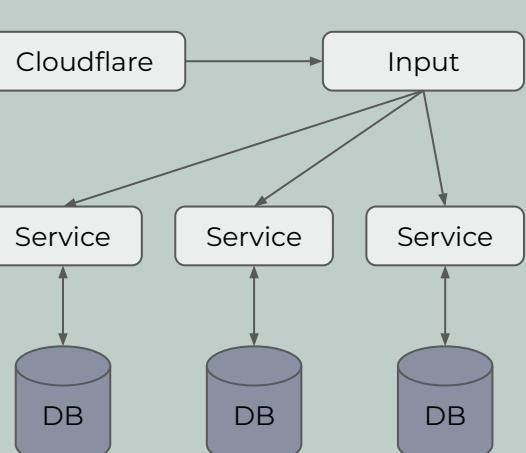


**All of it**

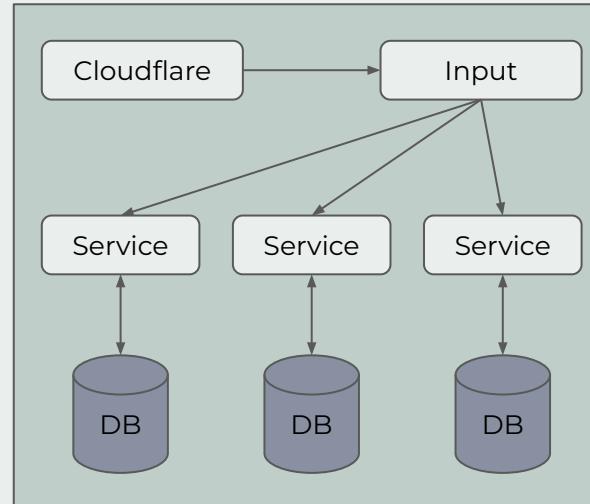
## Degrees of Separation



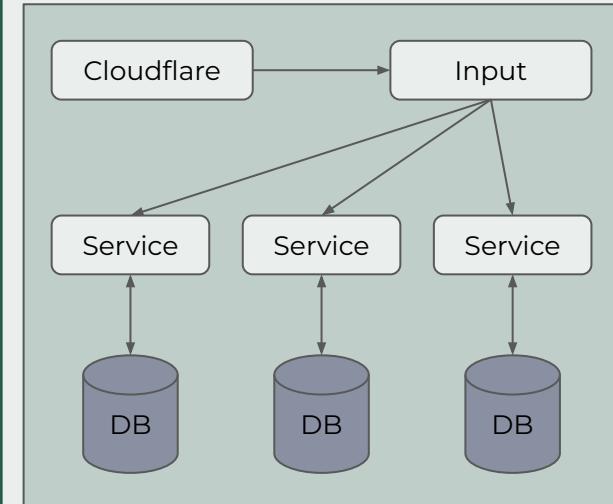
wehkamp



kleertjes.com



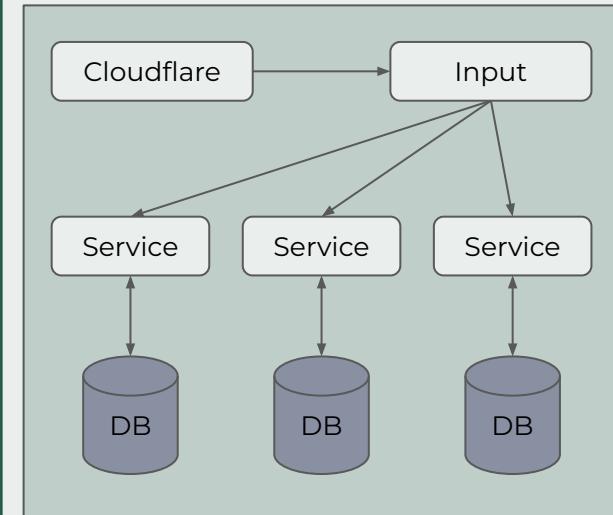
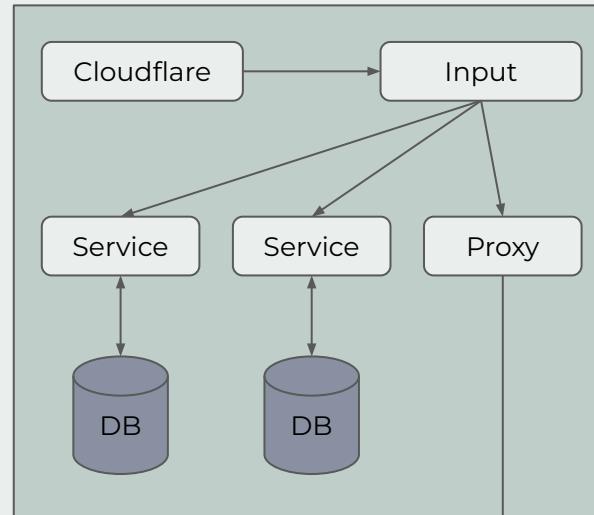
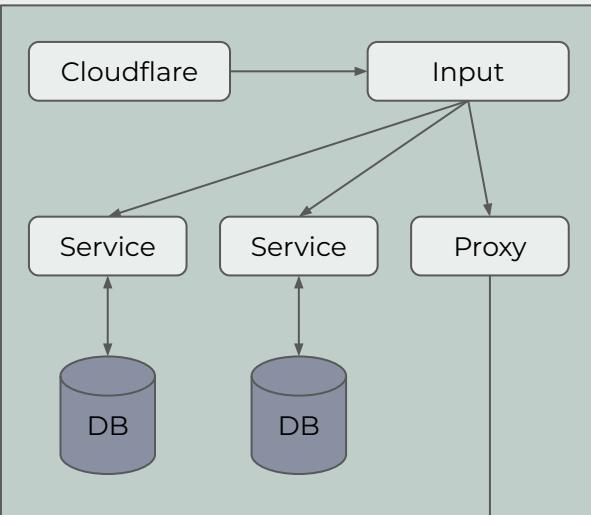
[union river]



## Degrees of Separation



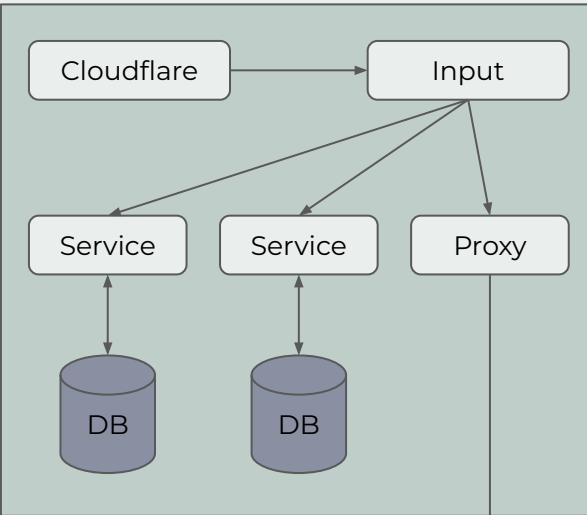
wehkamp



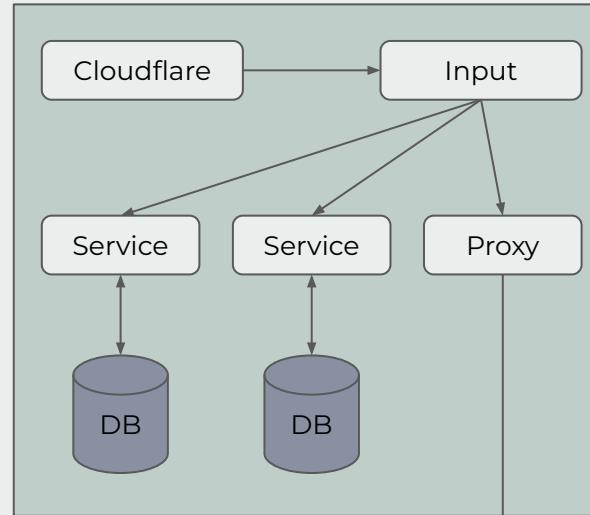
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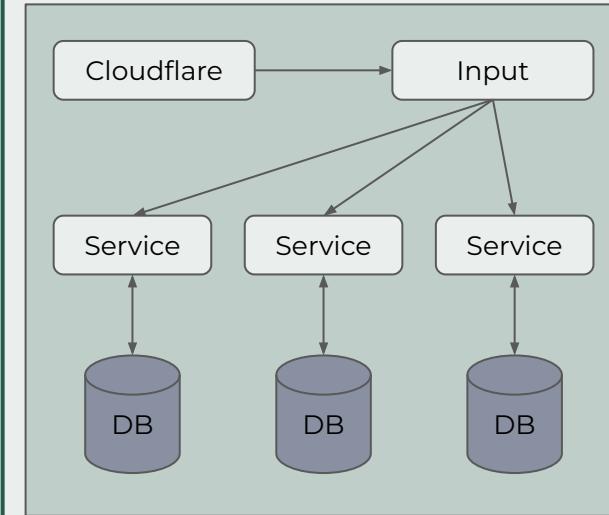
wehkamp



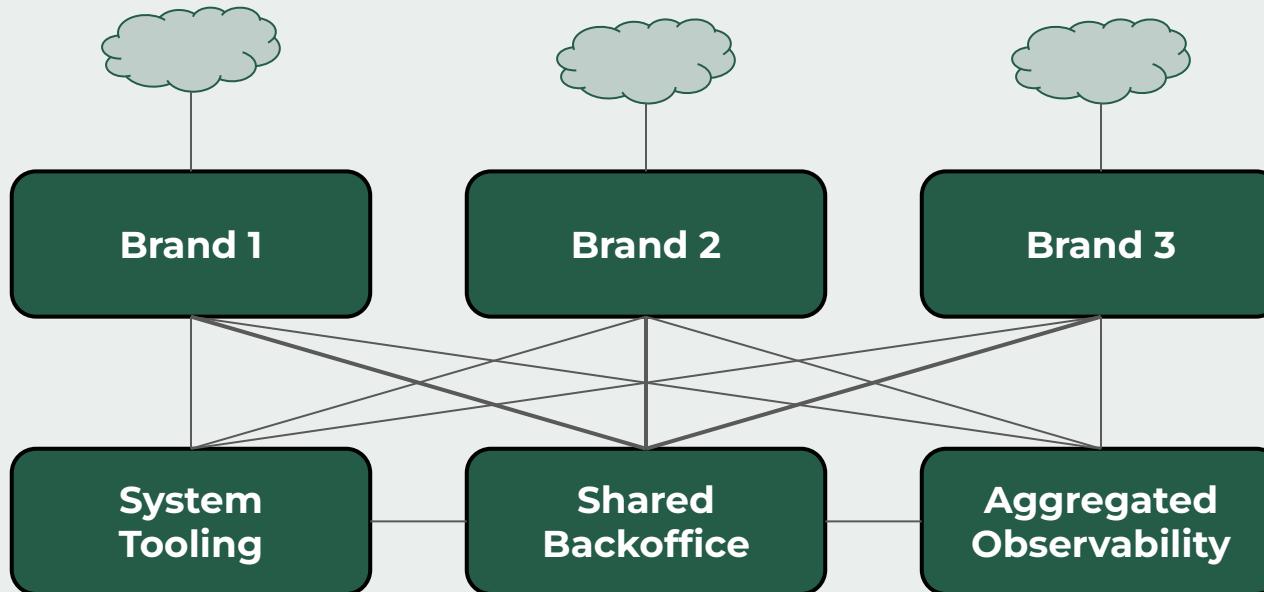
kleertjes.com



[union river]



## Degrees of Separation



## Atlas Namespace X

**Environment**  
wl-01-dev

**Workload**

Pod

Pod

Pod

Pod

**Environment**  
wl01-prod

**Workload**

Pod

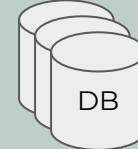
Pod

Pod

Pod

**Environment**  
data-dev

**Persistence**



DB



Kafka

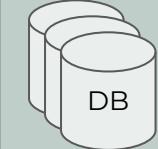


S3

Secrets

**Environment**  
data-prod

**Persistence**



DB



Kafka



S3

Secrets

**Controlplane**

CD

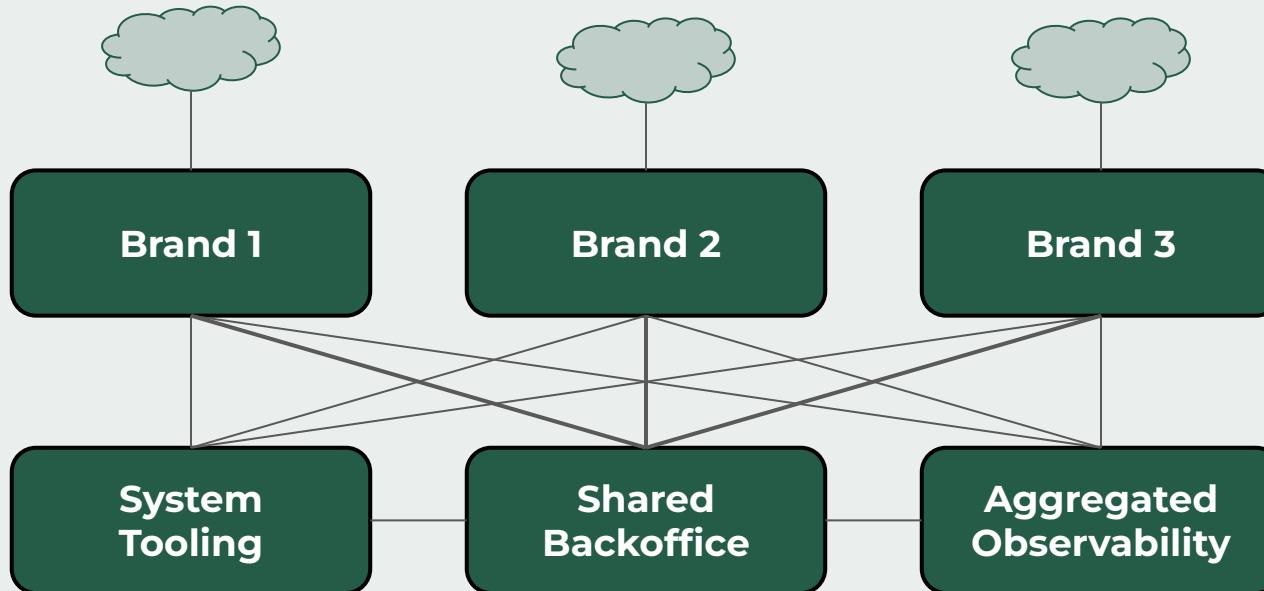
Secrets

**Networking**

DNS

Transit

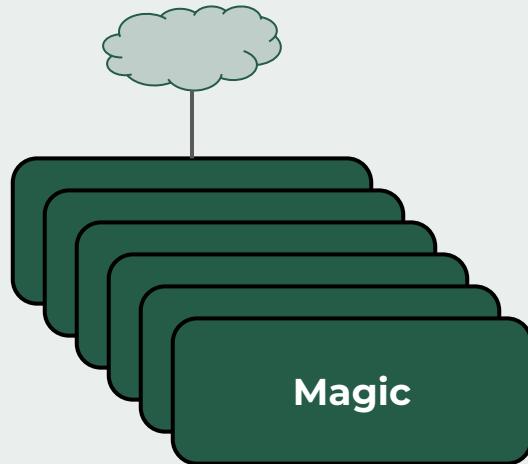
## Degrees of Separation



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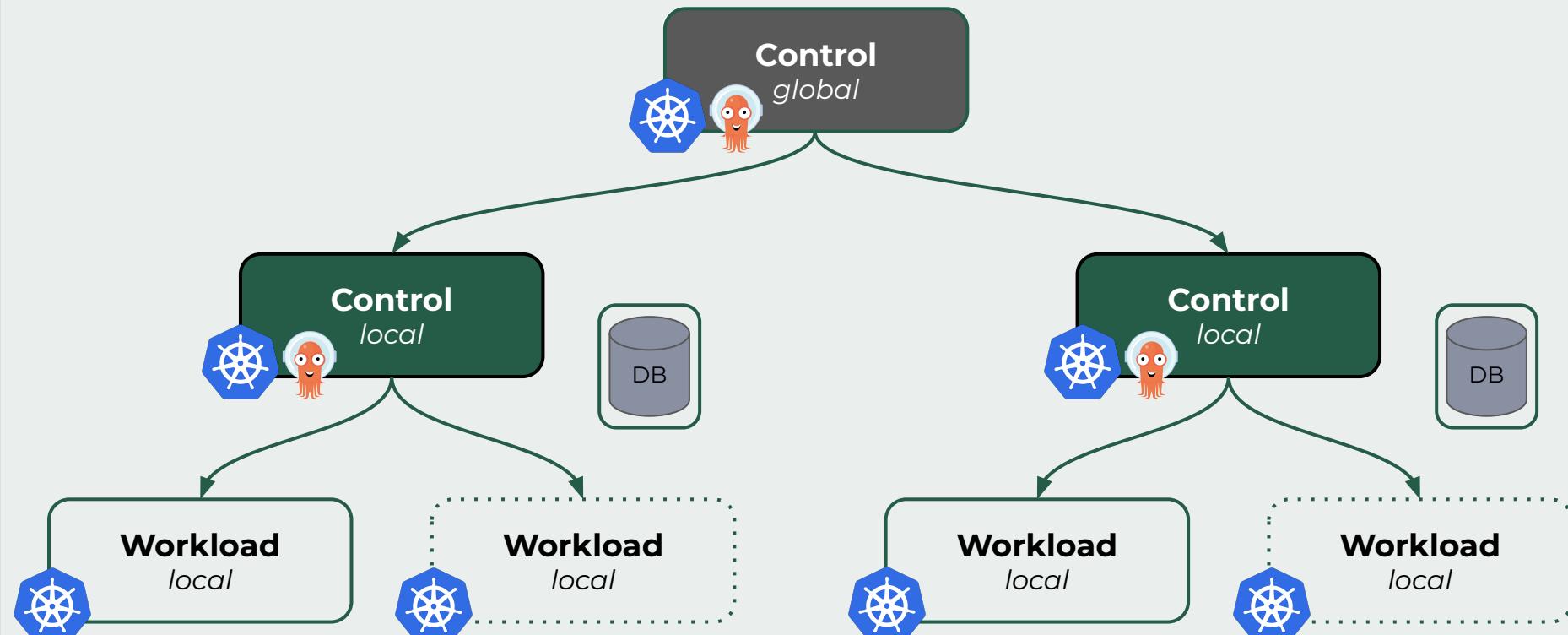
## Degrees of Separation?



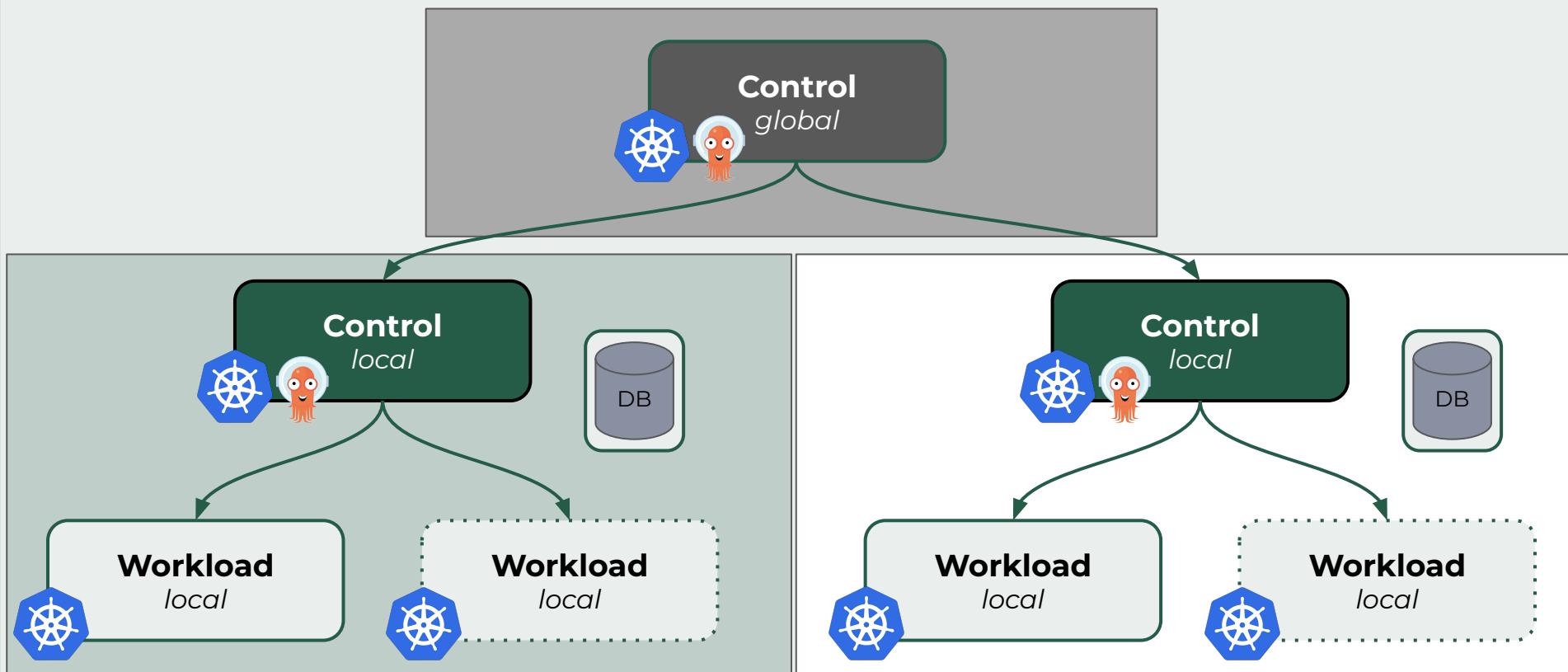
**W.  
G.R**

**Where does it come from?  
Where does it go?**

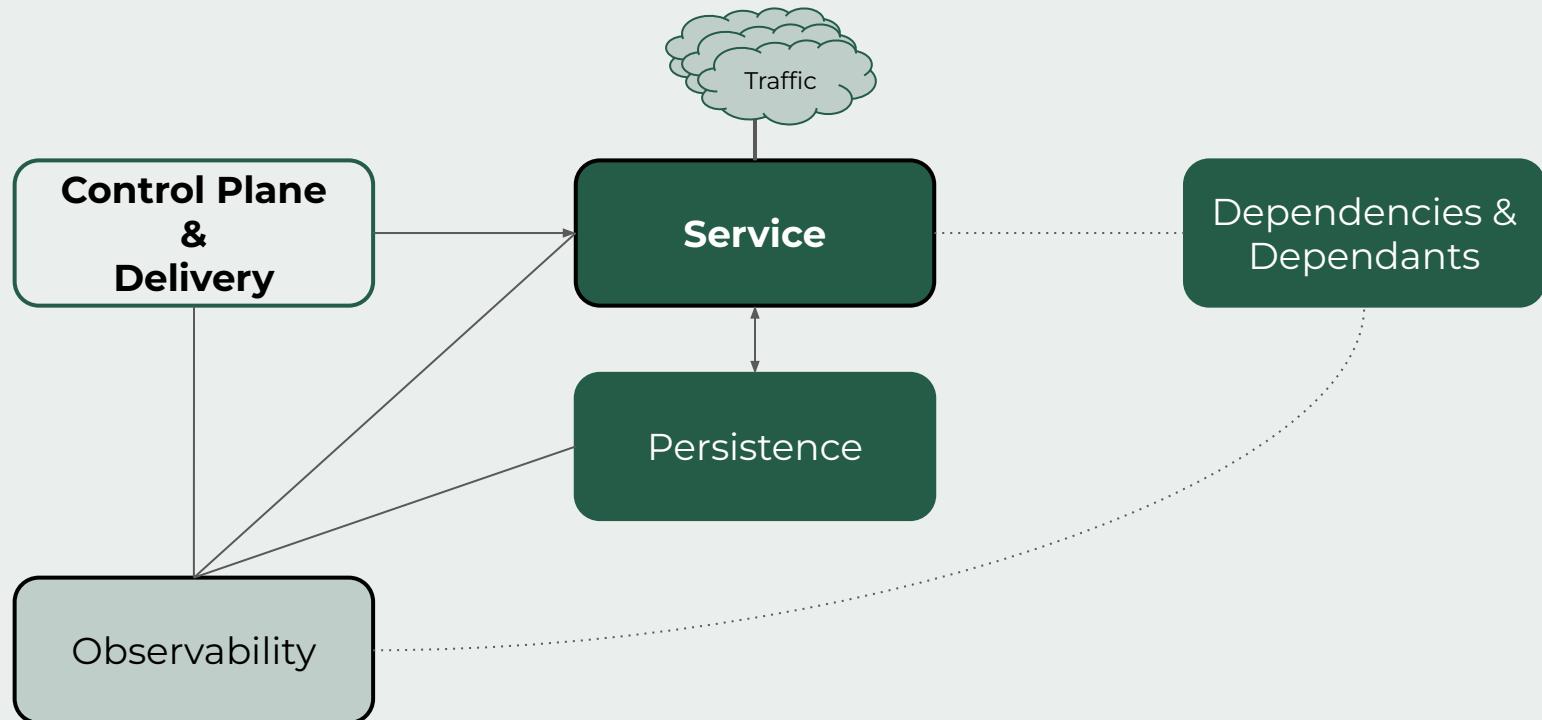
# Configuration Responsibility



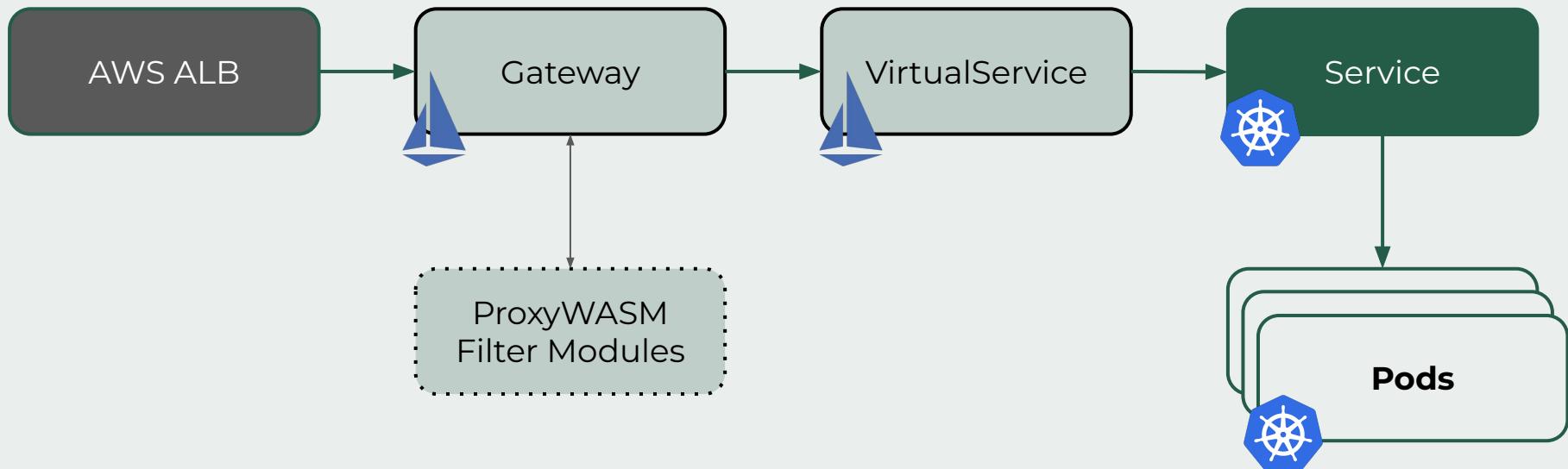
# Configuration Responsibility



## Service Perspective



## Traffic Perspective



## What does that look like?

```
apiVersion: argoproj.io/v1alpha1
kind: ApplicationSet
metadata:
  name: a-super-cool-service
  namespace: argo-cd
spec:
  generators:
    - matrix:
        generators:
          - list:
              elements:
                - envType: dev
                  values:
                    maxReplicaCount: "2"
                - envType: prod
                  values:
                    maxReplicaCount: "20"
    - clusters:
        selector:{}
```

## What does that look like?

```
source:
  repoURL: https://example.com/atlas-helm-charts/master/
  chart: helm-chart-atlas-app
  helm:
    valuesObject:
      traffic:
        trusted:
          exposed: true
          allowUnsafeMethods: false
        consumer:
          exposed: false
      requiredSystemValues:
        deploymentTargets: "{{metadata.annotations.deploymentTargets}}"
      image:
        name: "{{values.ecrRepo}}"
        tag: "{{values.imageTag}}"
```

## Ingredients

- Service-oriented
- Business-oriented

**What traffic**

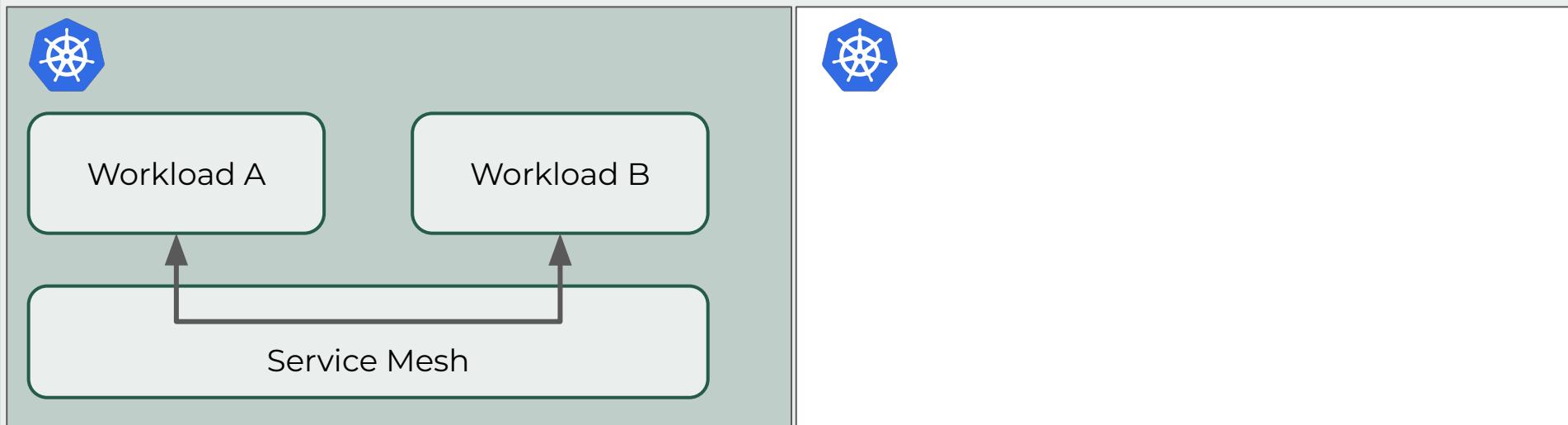
**What failure domain**

**How Resilient**

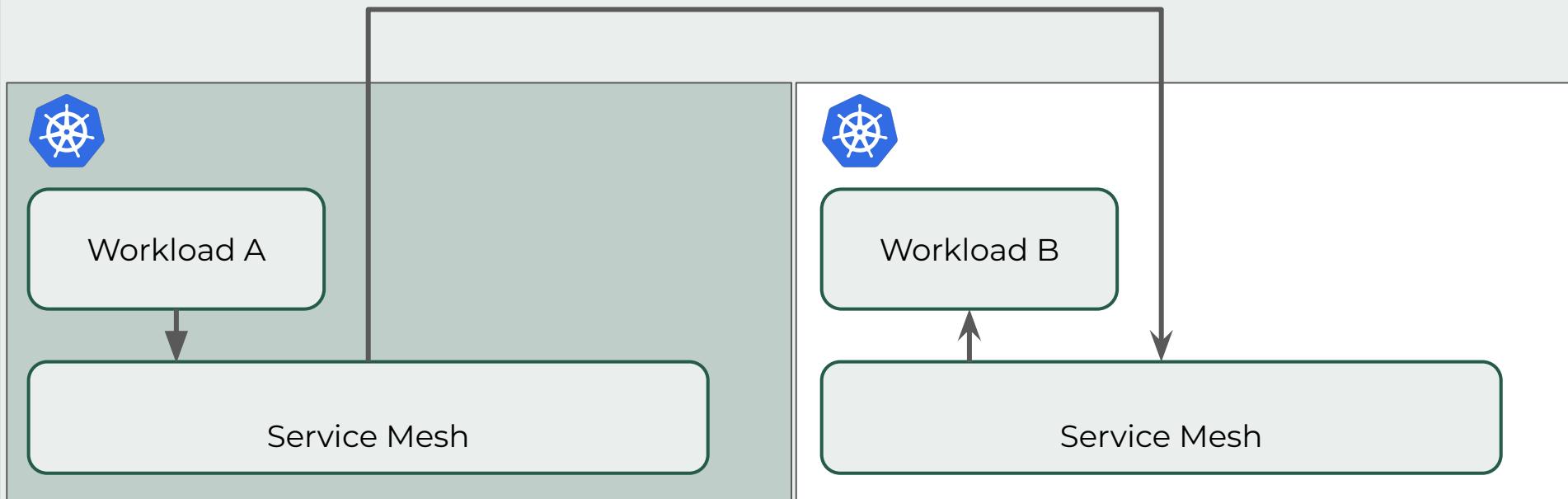
**How expensive**



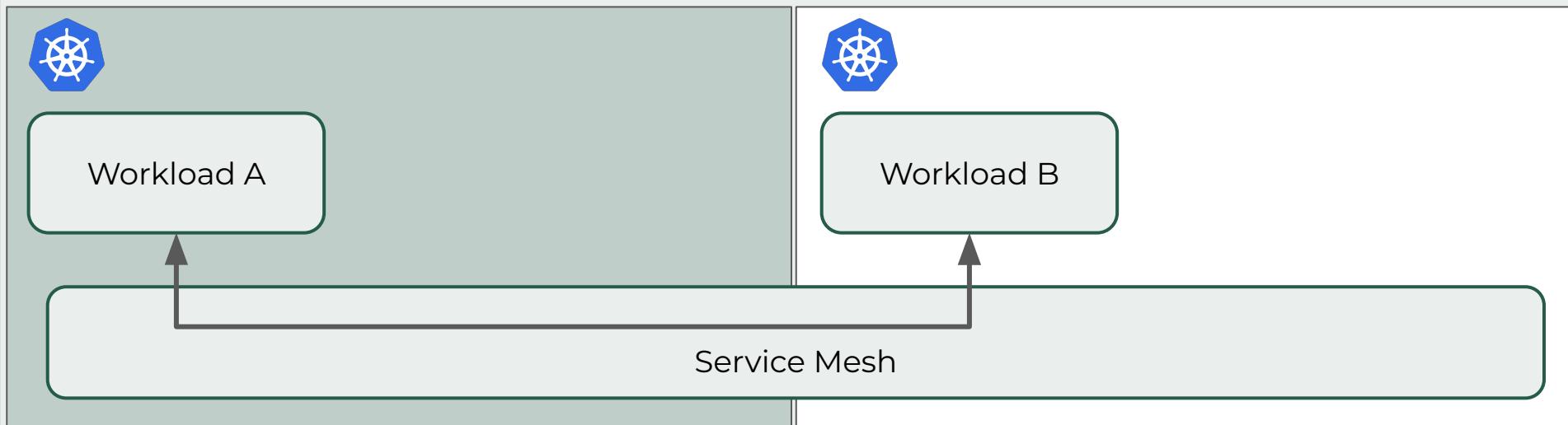
# Multi-Cluster Inter-Service



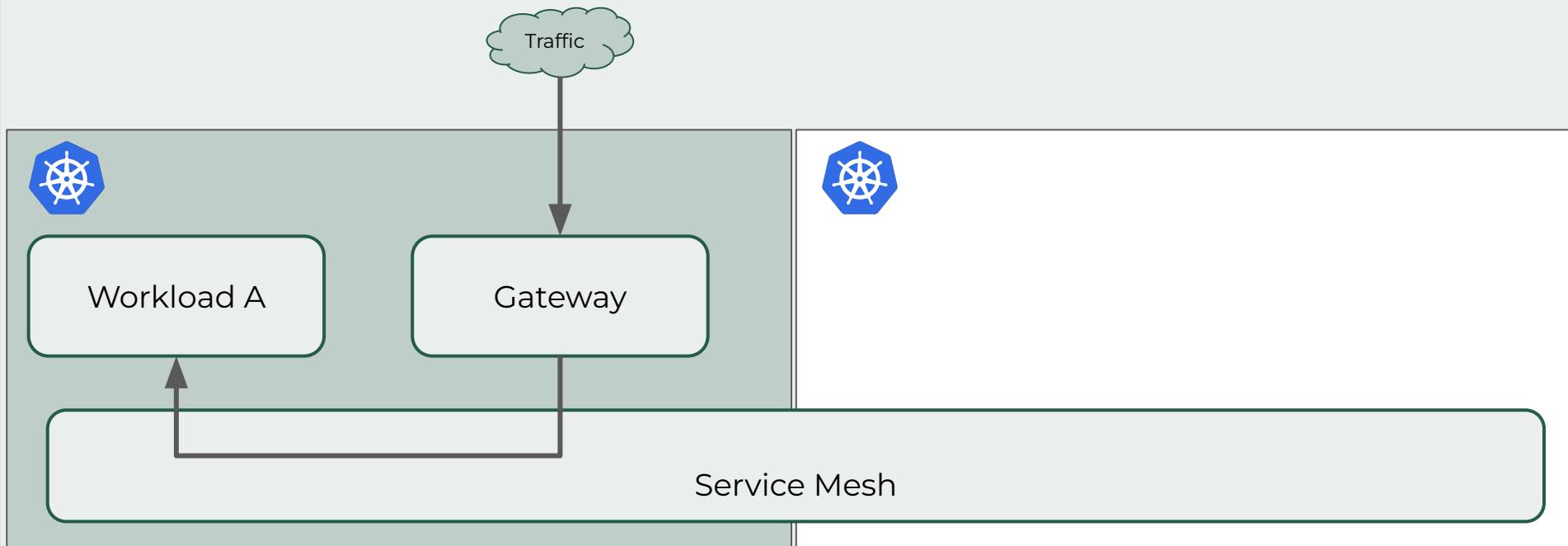
# Multi-Cluster Inter-Service



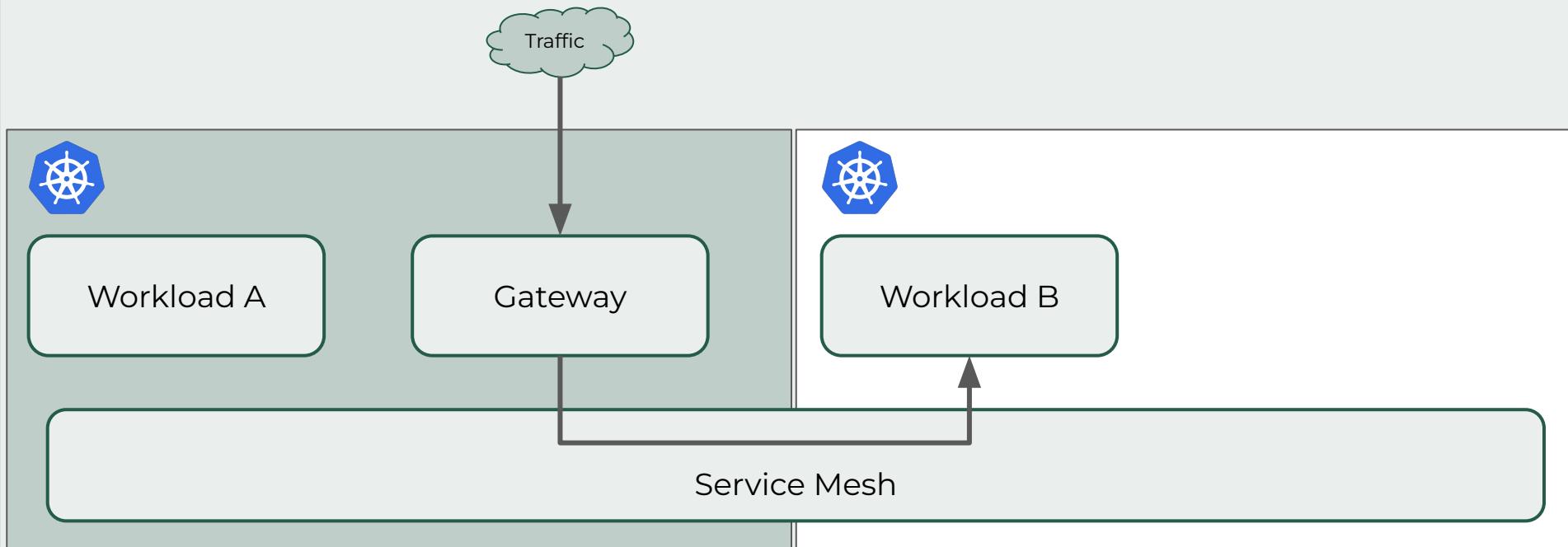
# Multi-Cluster Inter-Service



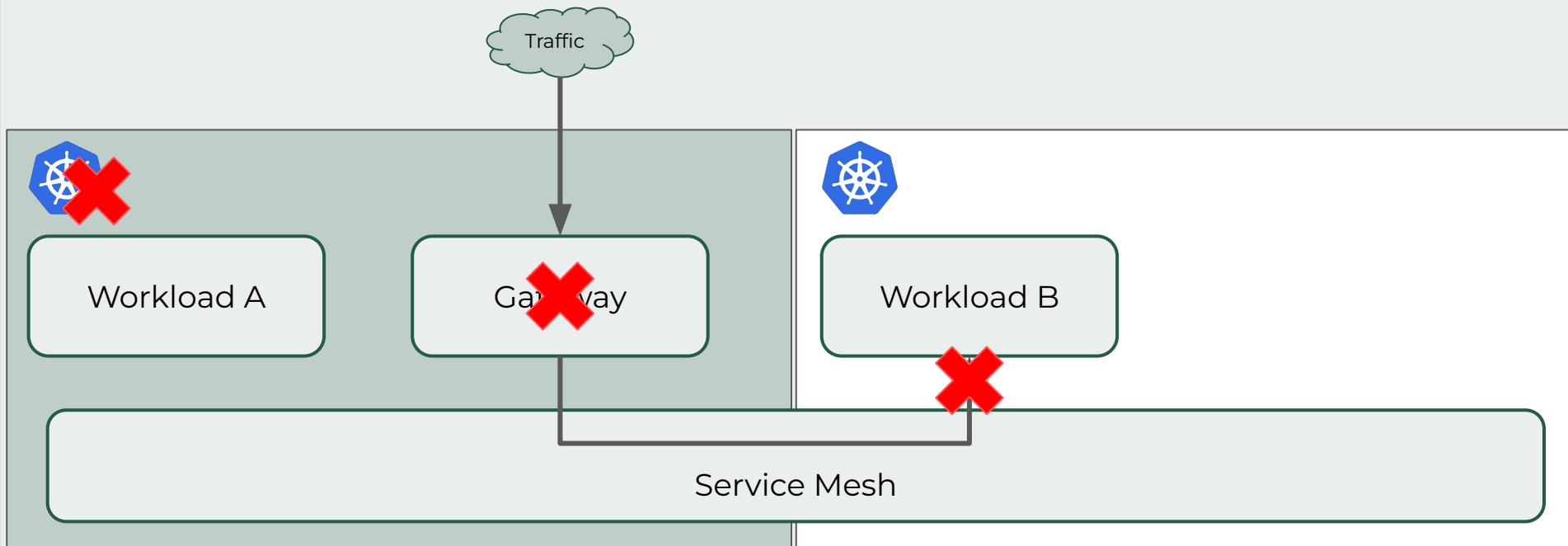
# Multi-Cluster Traffic Ingress



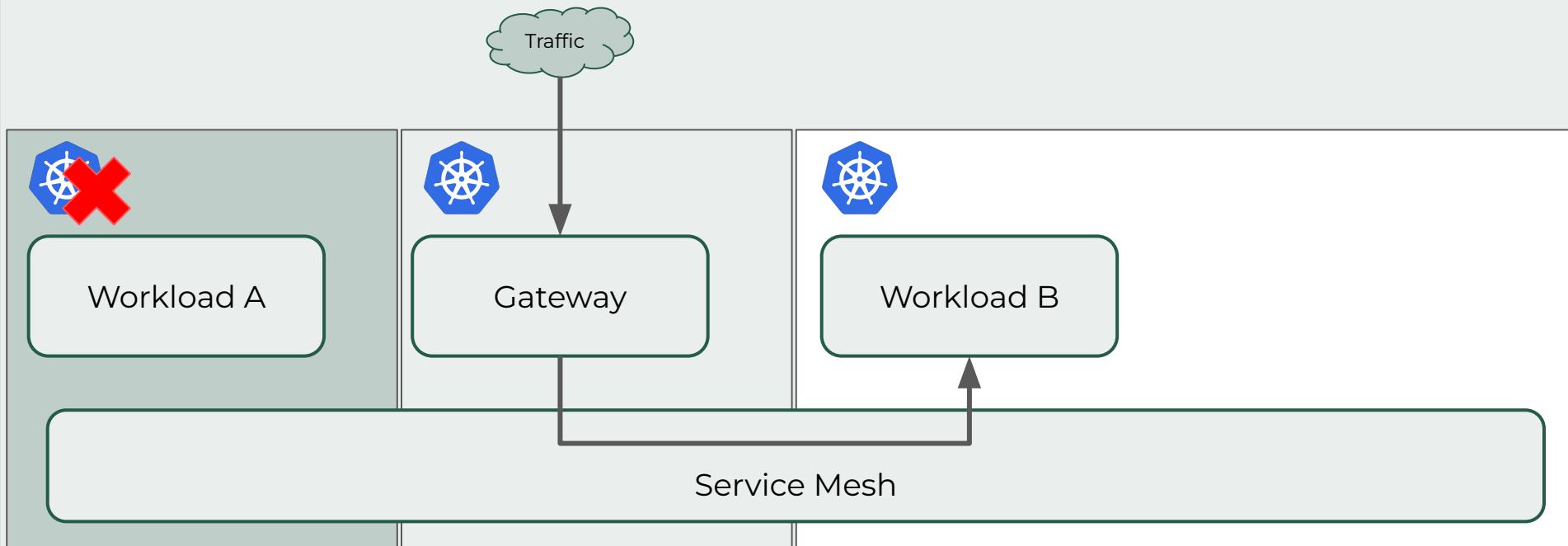
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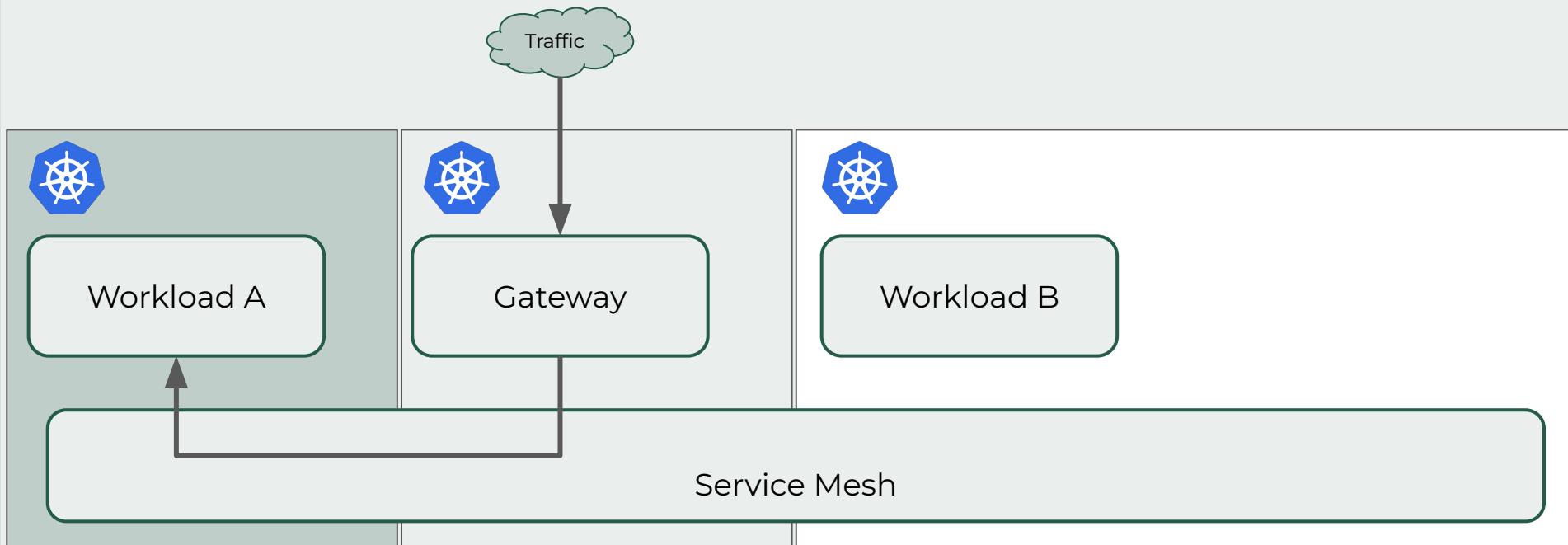
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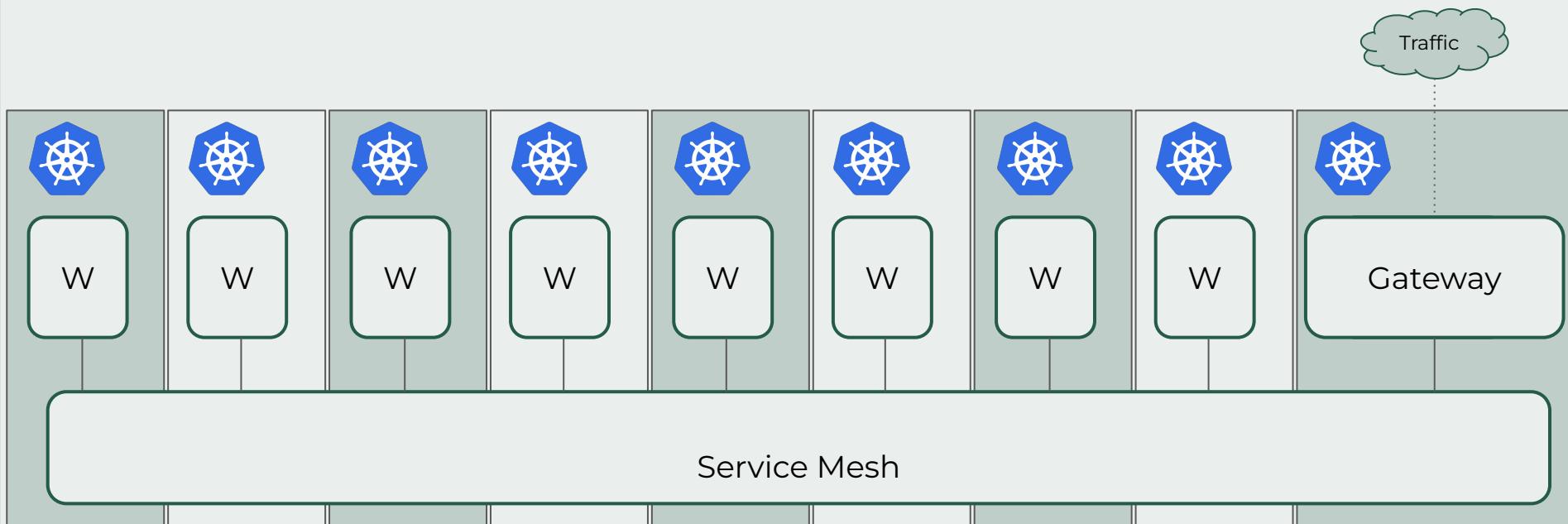
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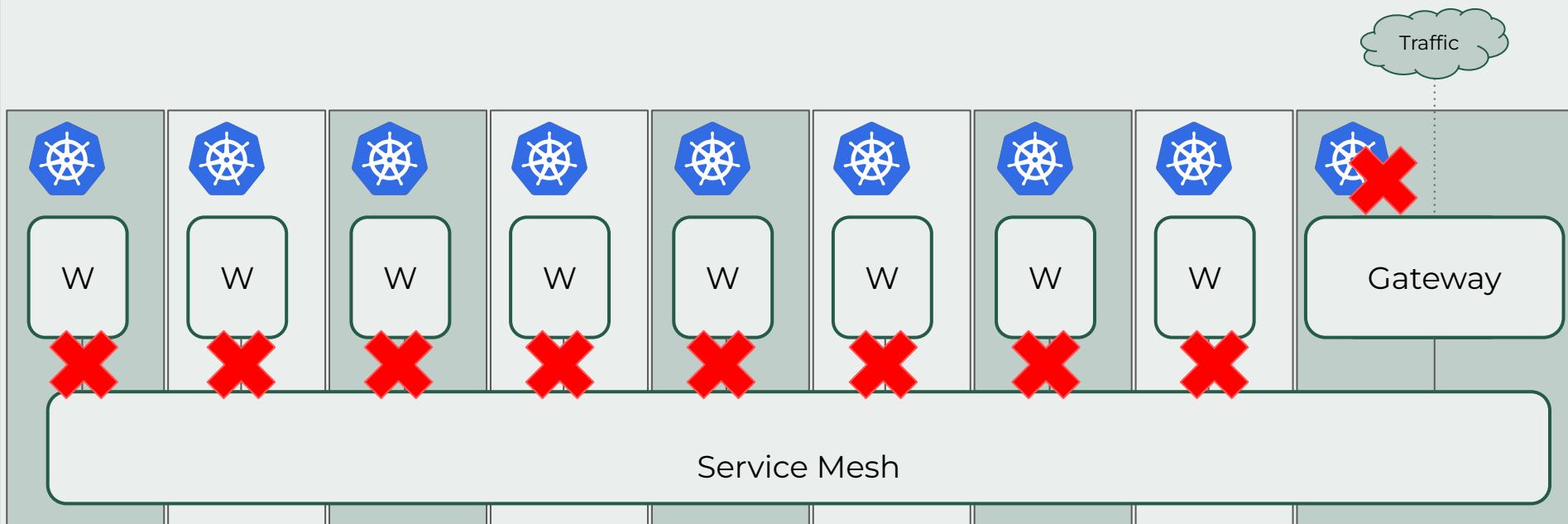
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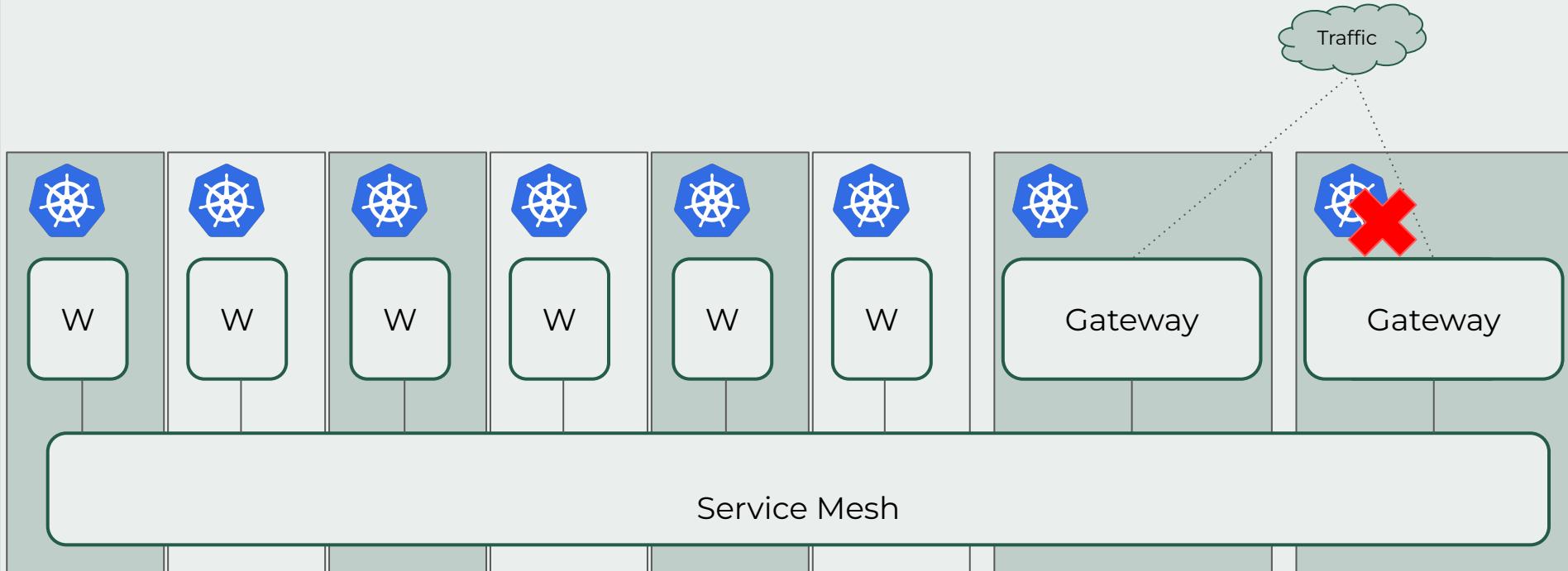
# Multi-Cluster Traffic Ingress



# Multi-Cluster Traffic Ingress



# Multi-Cluster Traffic Ingress



## Questions questions...

In order to implement more of this:

- Service locator?
- Traffic stealing?
- One oopsie == failure?
- Is this too special?
- Developer-friendly?
- Which failure domains?



**Building a brighter future**



Wehkamp Retail Group  
2023 - 2024