

Achieve the maximum availability based on cloud native technologies

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What is cloud native

Kubernetes (Containerize)

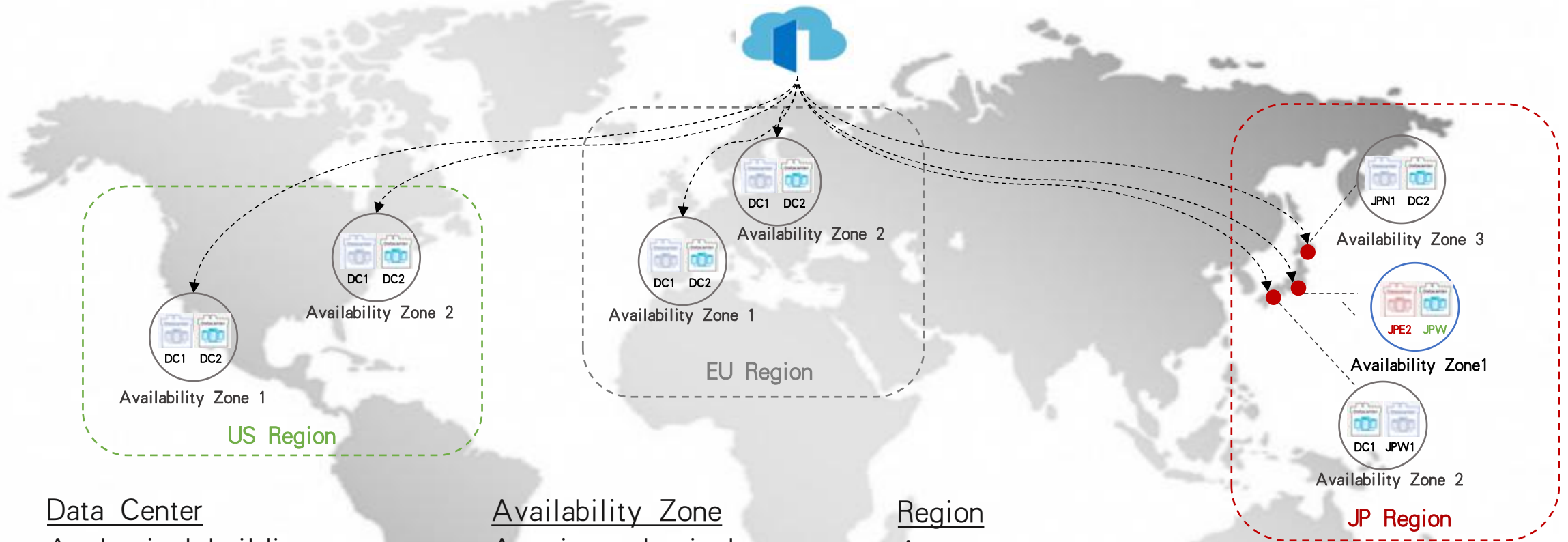
Istio (Micro-service)

SRE (Devops+)

Global Distribution on Hybrid Cloud

One Point Platform is a distributed platform deployed to all major regions to achieve high availability

Global Load Balancing by Azure Front Door



Data Center

A physical building equipped with independent power, cooling, and networking.

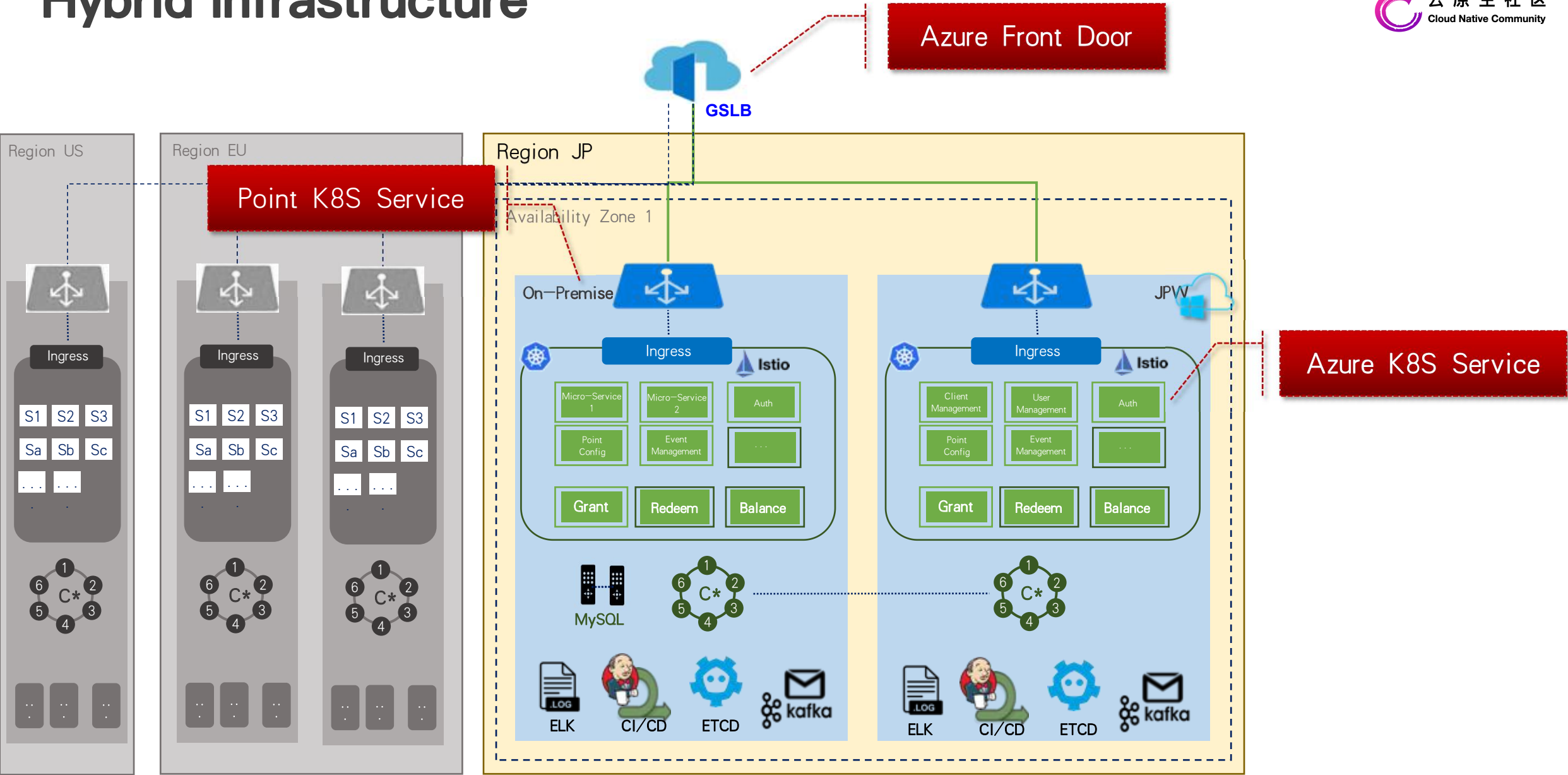
Availability Zone

A unique physical location within a region and made up of one or more datacenters. Latency $\leq 100\text{ms}$ within Az

Region

An area or a country made up of one or more Availability Zones.

Hybrid Infrastructure



Cloud native related technical stack



Cassandra no sql distributed database



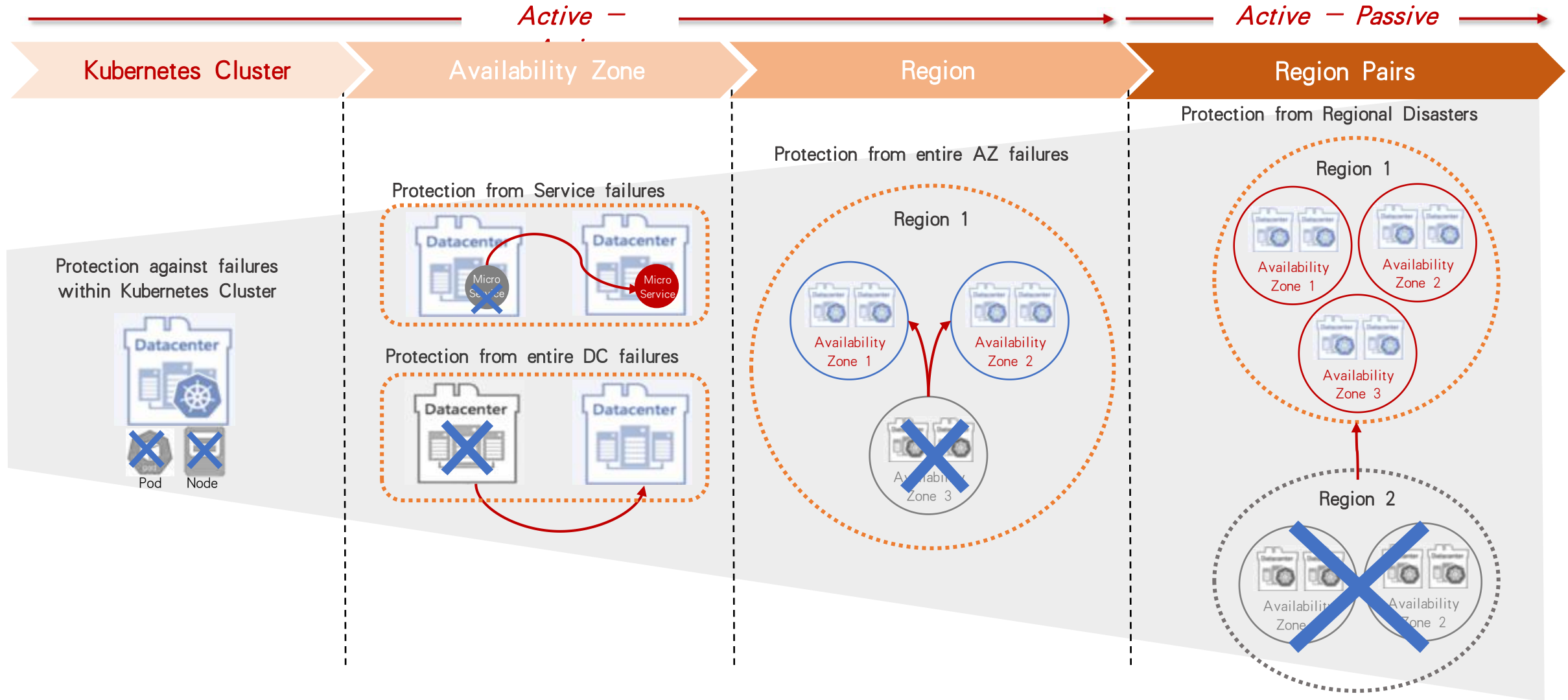
ETCD cluster across data centers



Kafka & Mirror maker across data centers

Maximum Availability

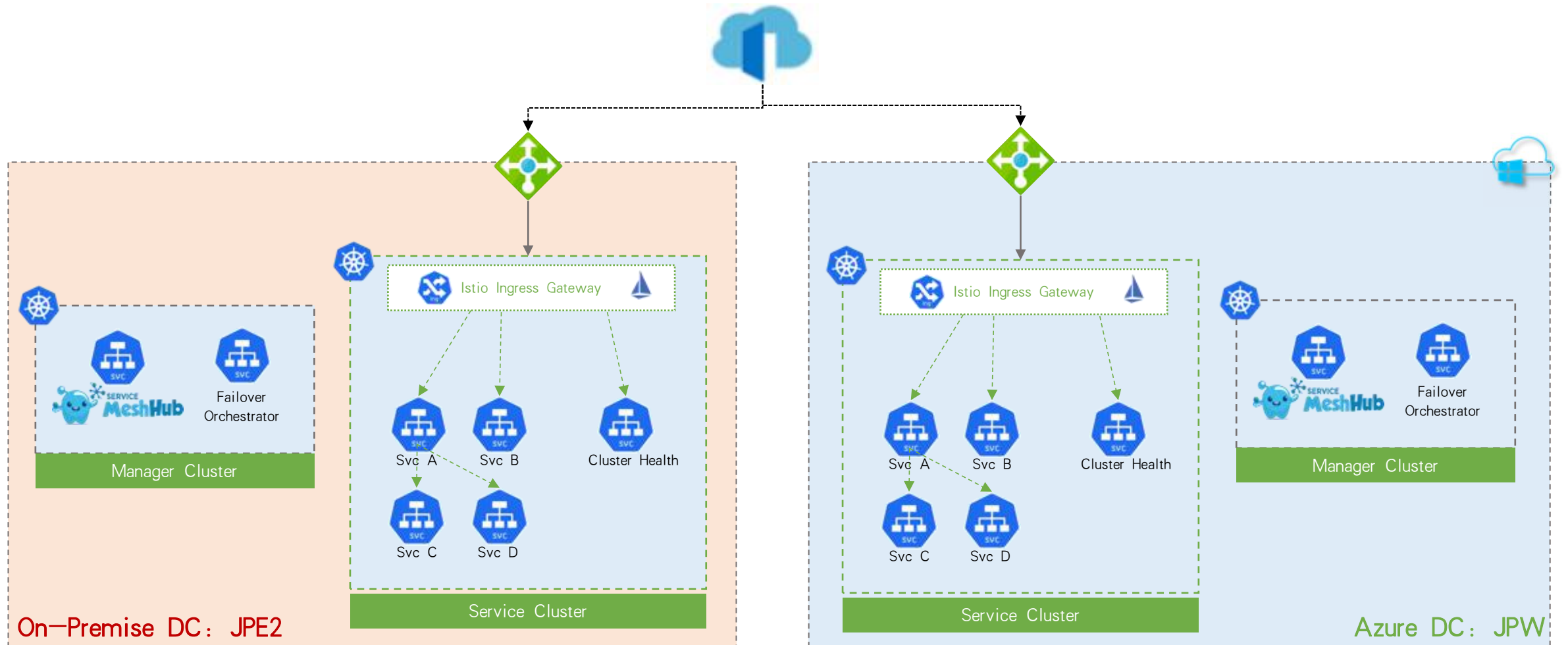
4 Tiers Failover to achieve the maximum availability



Service Level Failover

Service Failover within the same cluster without returning errors to clients via Istio

Service Failover across Cluster(DC) without returning errors to clients via Failover Orchestrator



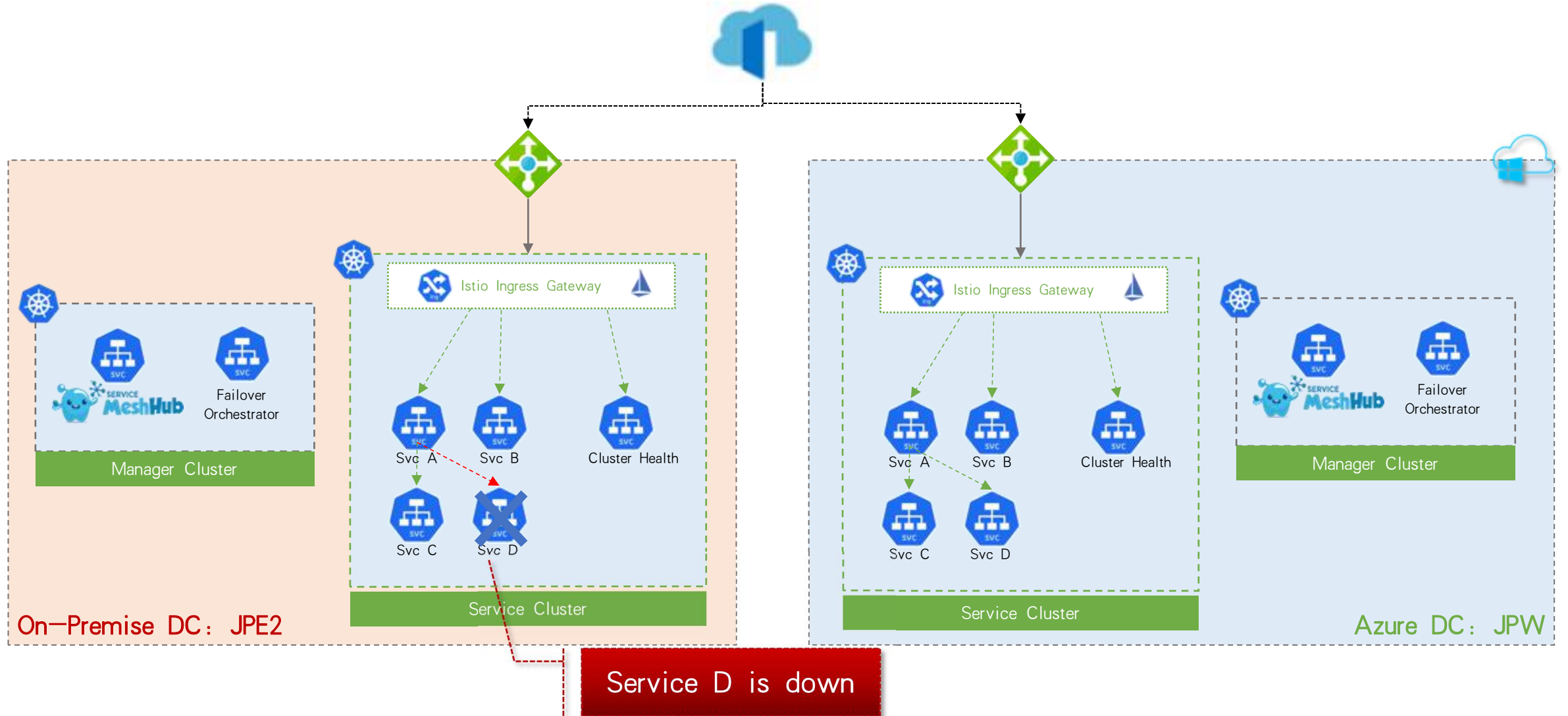
Initial Istio Configuration for Sev D

```
spec:
  gateways:
  - onepoint-gateway-external
  - onepoint-gateway-internal
  hosts:
  - '*'
  http:
  - match:
    - uri:
        exact: /service-D
      name: rakuten-sample-service-D
      route:
      - destination:
          host: rakuten-sample-service-D
          port:
            number: 8080
          subset: production
        weight: 100
      - destination:
          host: rakuten-sample-service-D
          port:
            number: 8080
          subset: canary
        weight: 0
      - destination:
          host: rakuten-sample-service-D.az-jpw-rakuten-cluster101.jpn-az-jpw-rakuten-cluster101
          port:
            number: 8080
          weight: 0
```


Service Level Failover

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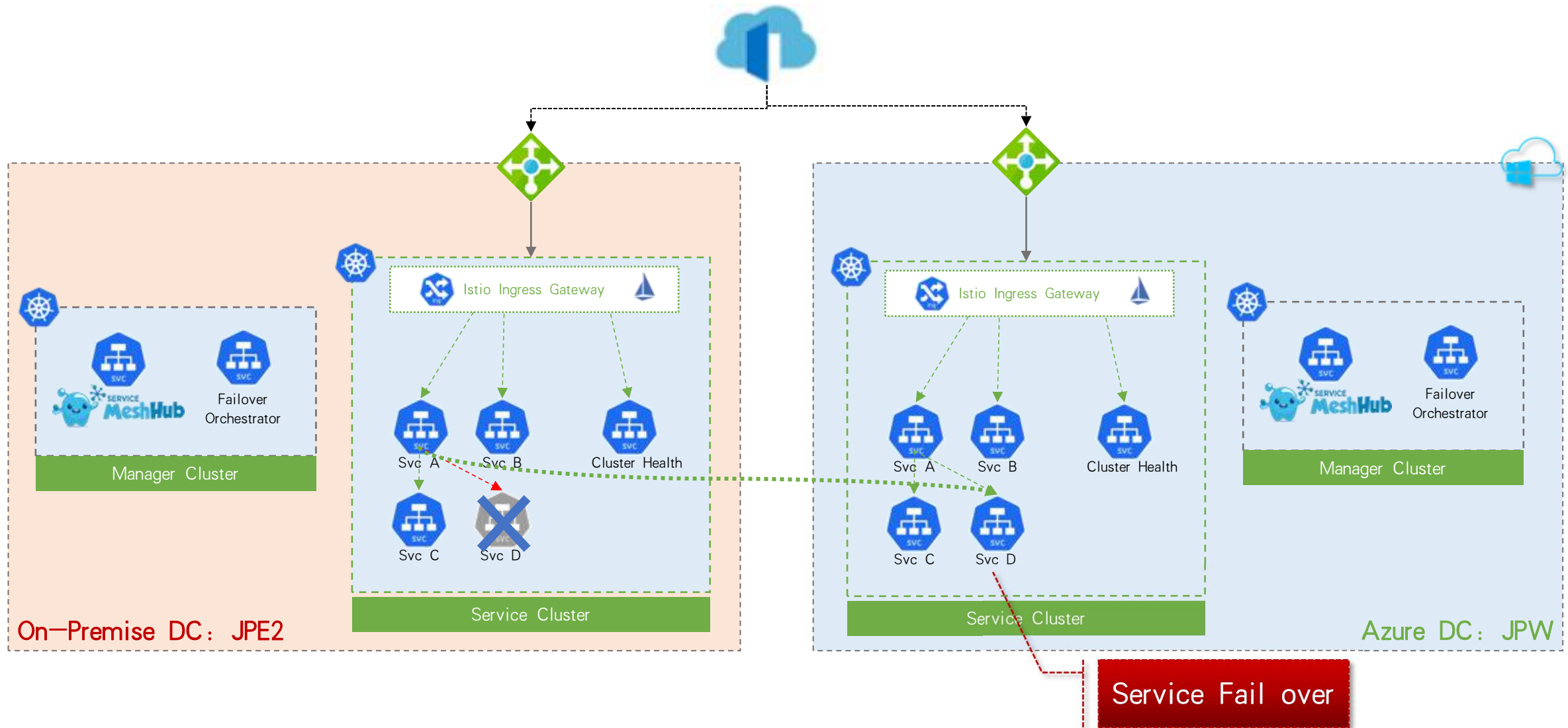
Failed over Istio Configuration for Sev D

```
spec:
  gateways:
  - onepoint-gateway-external
  - onepoint-gateway-internal
  hosts:
  - '*'
  http:
  - match:
    - uri:
        exact: /service-D
      name: rakuten-sample-service-D
      route:
      - destination:
          host: rakuten-sample-service-D
          port:
            number: 8080
          subset: production
        weight: 0
      - destination:
          host: rakuten-sample-service-D
          port:
            number: 8080
          subset: canary
        weight: 0
      - destination:
          host: rakuten-sample-service-D.az-jpw-rakuten-cluster101.jpn-az-jpw-rakuten-cluster101
          port:
            number: 8080
        weight: 100
```

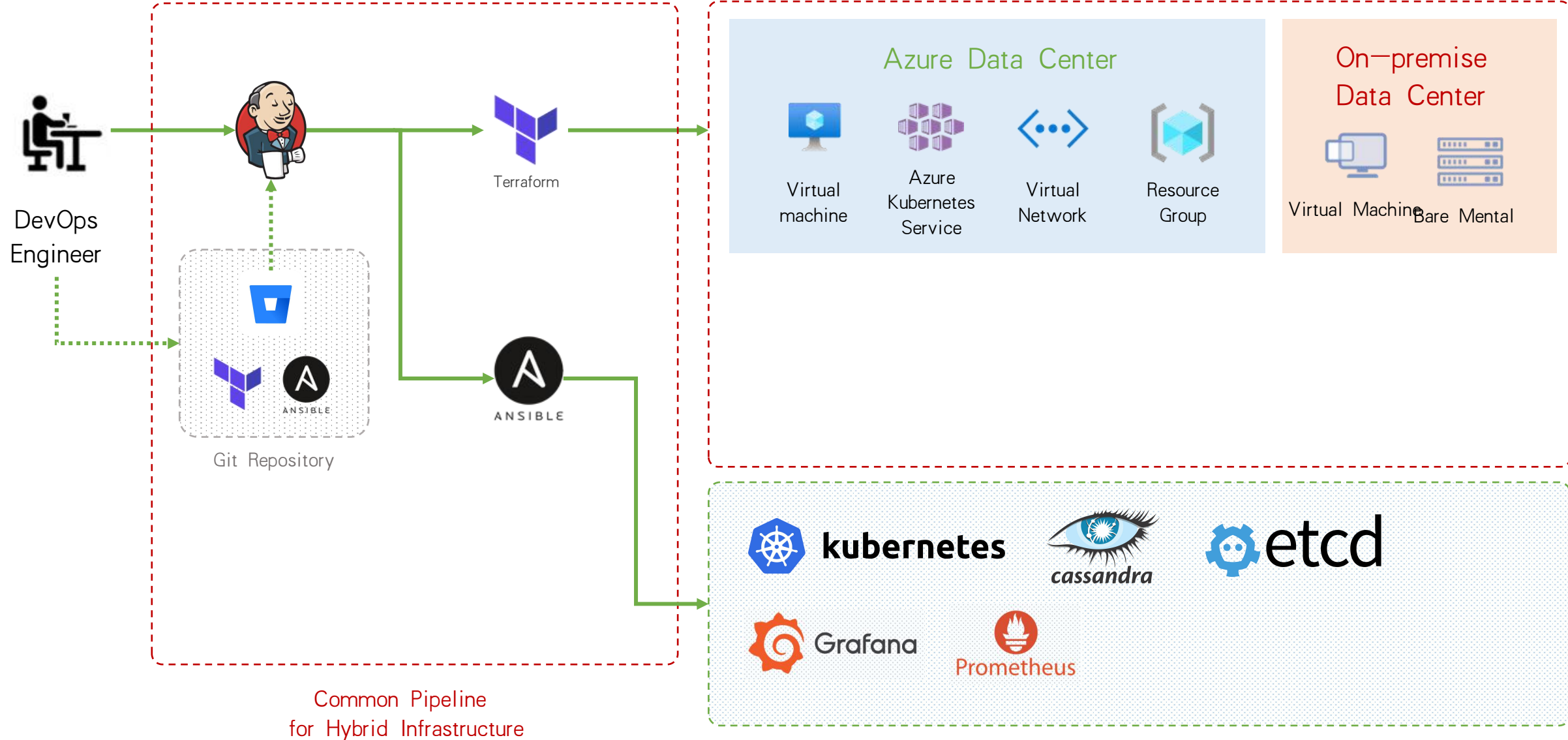
Service Level Failover

Service Failover within the same cluster without returning errors to clients via Istio

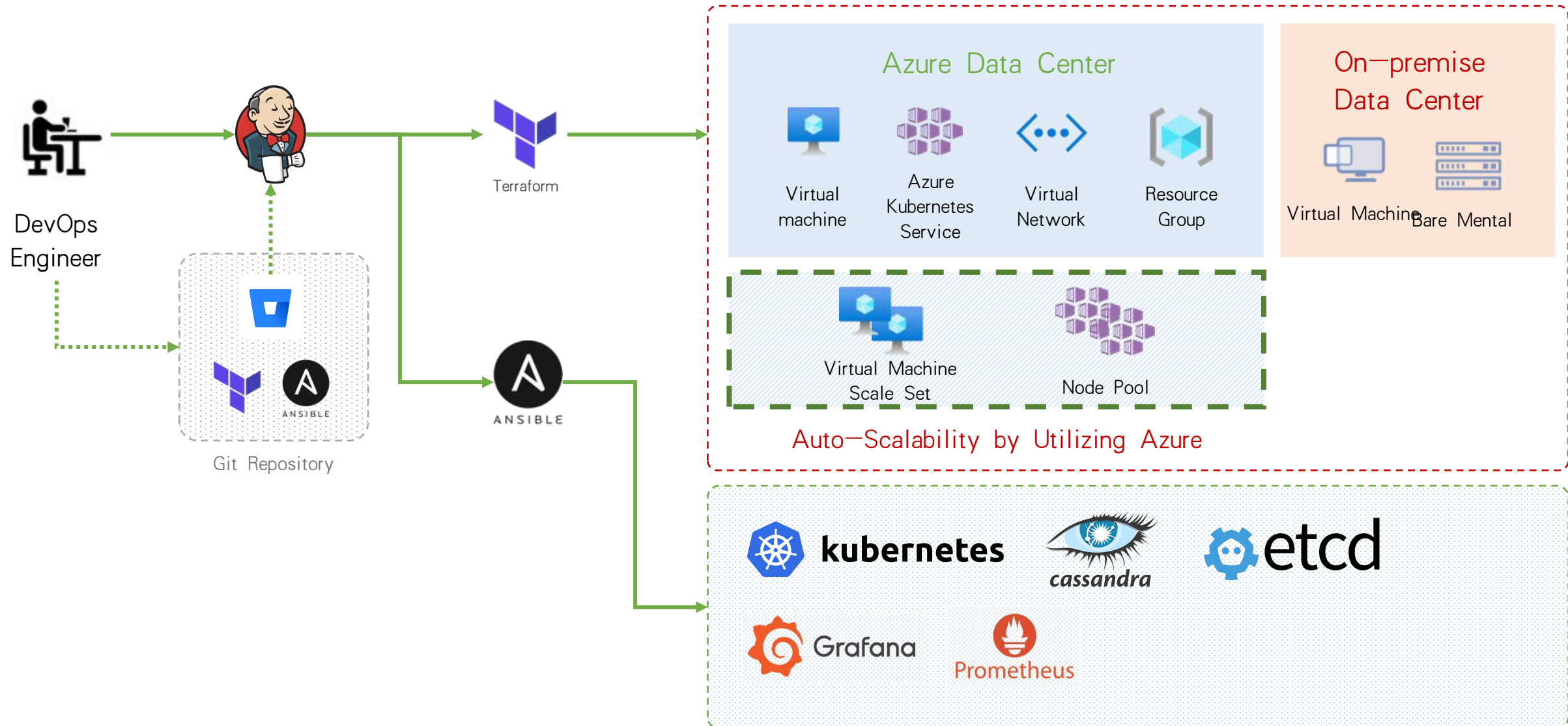
Service Failover across Cluster(DC) without returning errors to clients via Failover Orchestrator



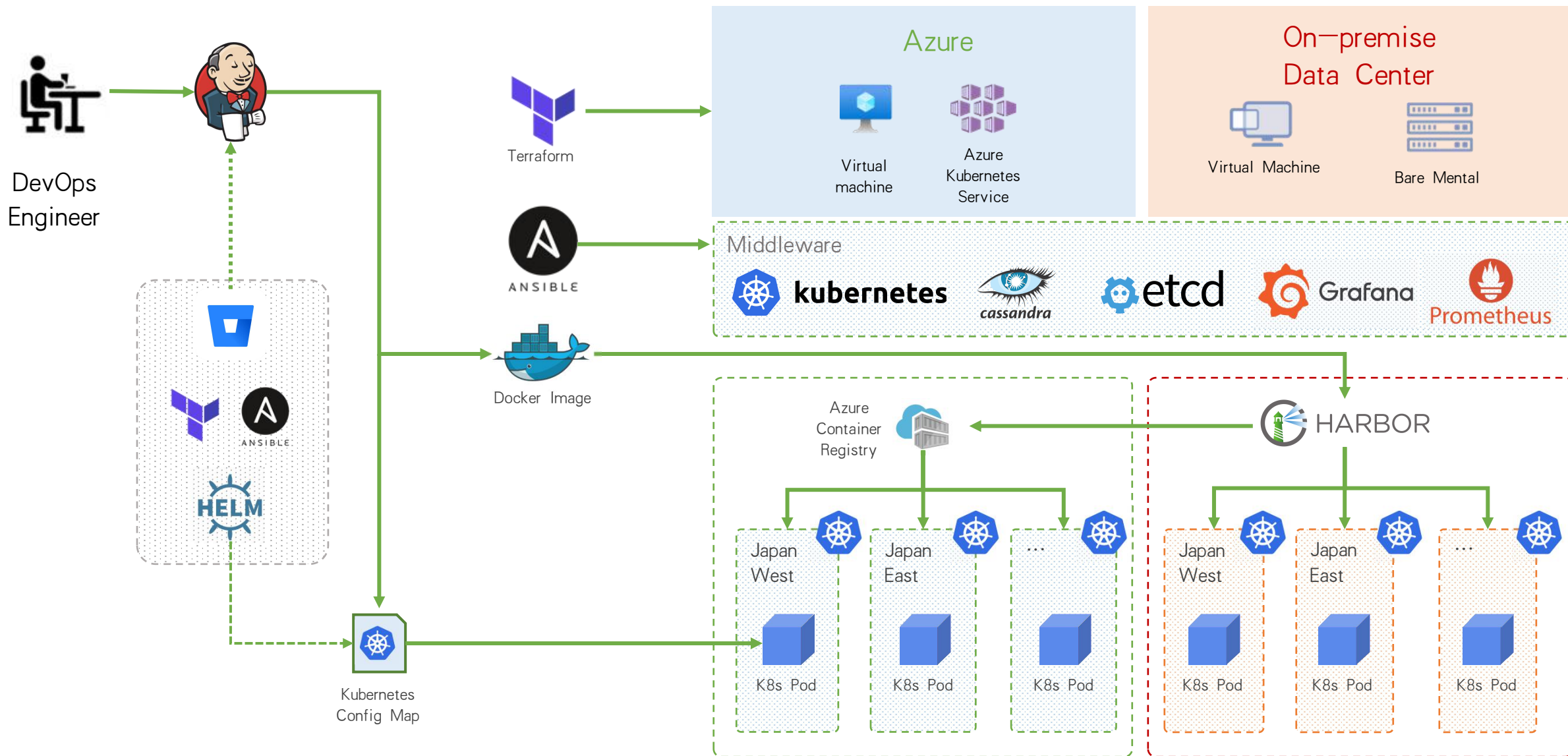
Infra as a Code: Hybrid Infra Construction



Infra as a Code: Auto-Scale



Release Pipeline on Multiple Regions and DCs





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THANKS!



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