


The background is a solid dark blue. In the top-left corner, there are several overlapping triangles in shades of light blue and teal. In the bottom-right corner, there are more overlapping triangles in similar shades, including a larger teal triangle and a smaller light blue one.

Kubernetes (k8s)

- 
1. What is Kubernetes?
 2. Architecture
 3. Resource Management

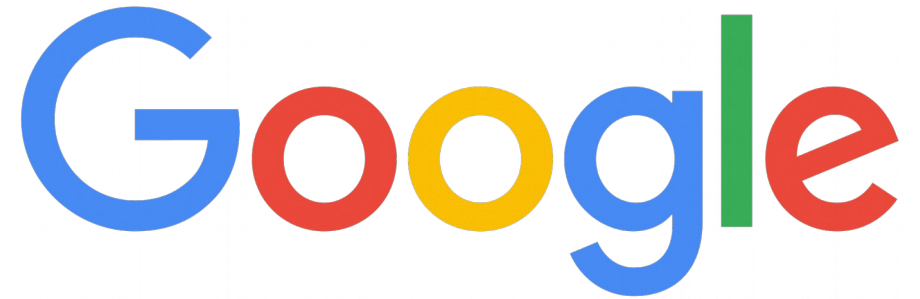
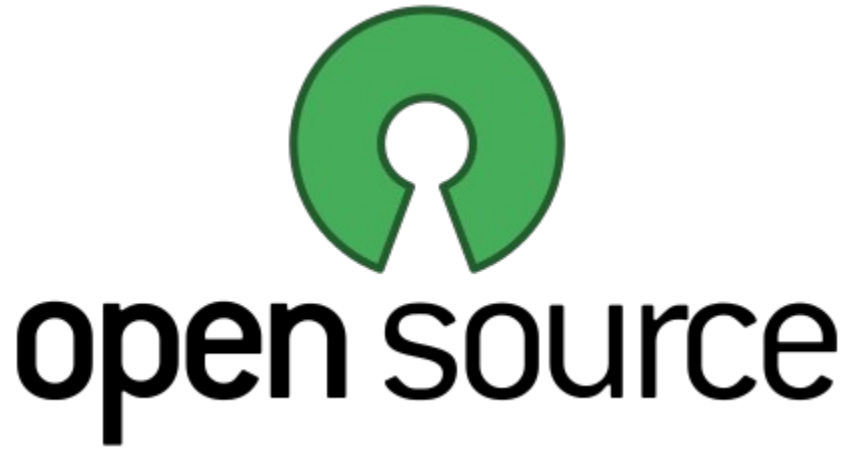
Agenda

The top corners of the slide feature decorative geometric shapes. The top-left corner has overlapping triangles in light blue, teal, and dark blue. The top-right corner has overlapping squares and triangles in light blue, teal, and dark blue.

1

Kubernetes – What is it?

Kubernetes – What is it?



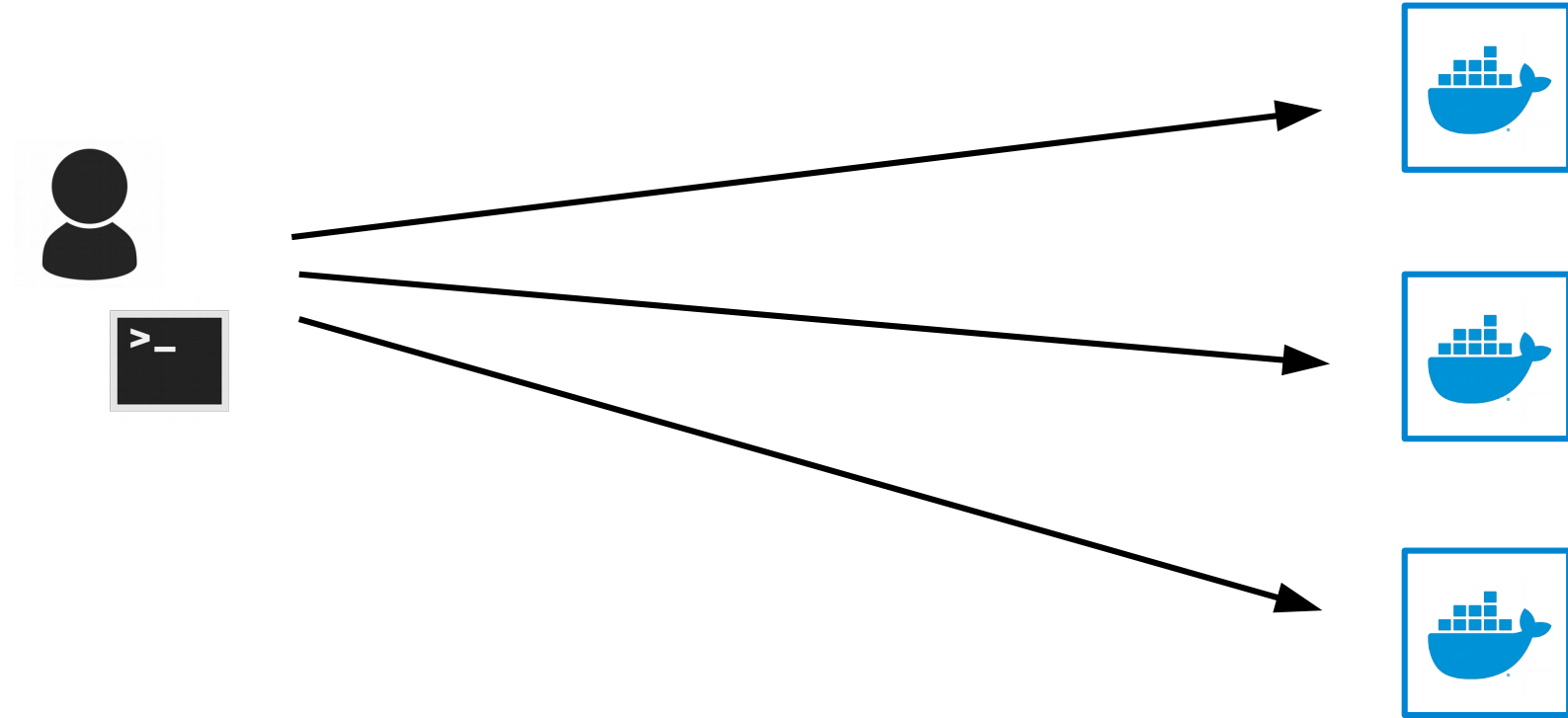
Kubernetes – What is it?



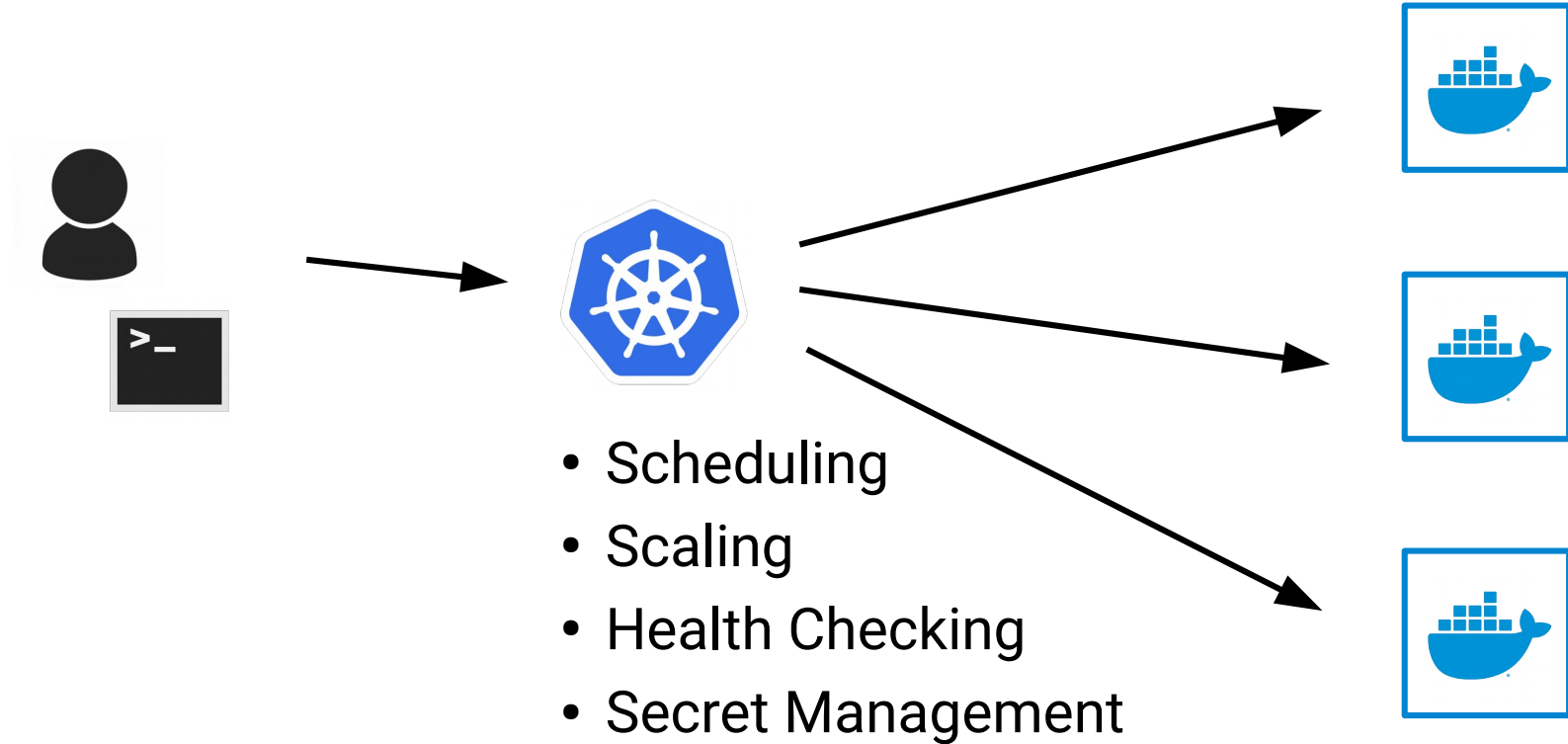
Kubernetes – What is it?



Kubernetes – What is it?



Kubernetes – What is it?

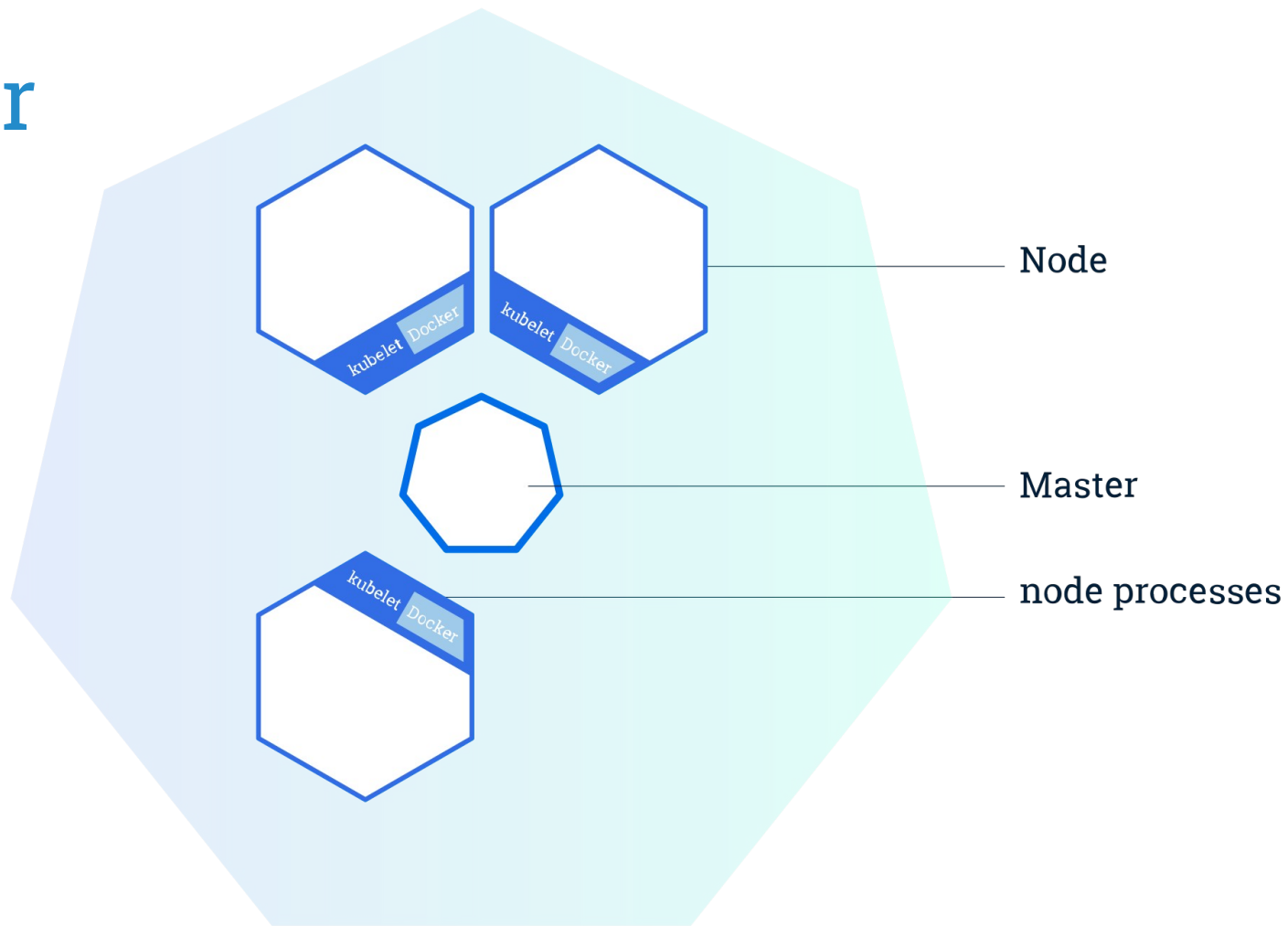


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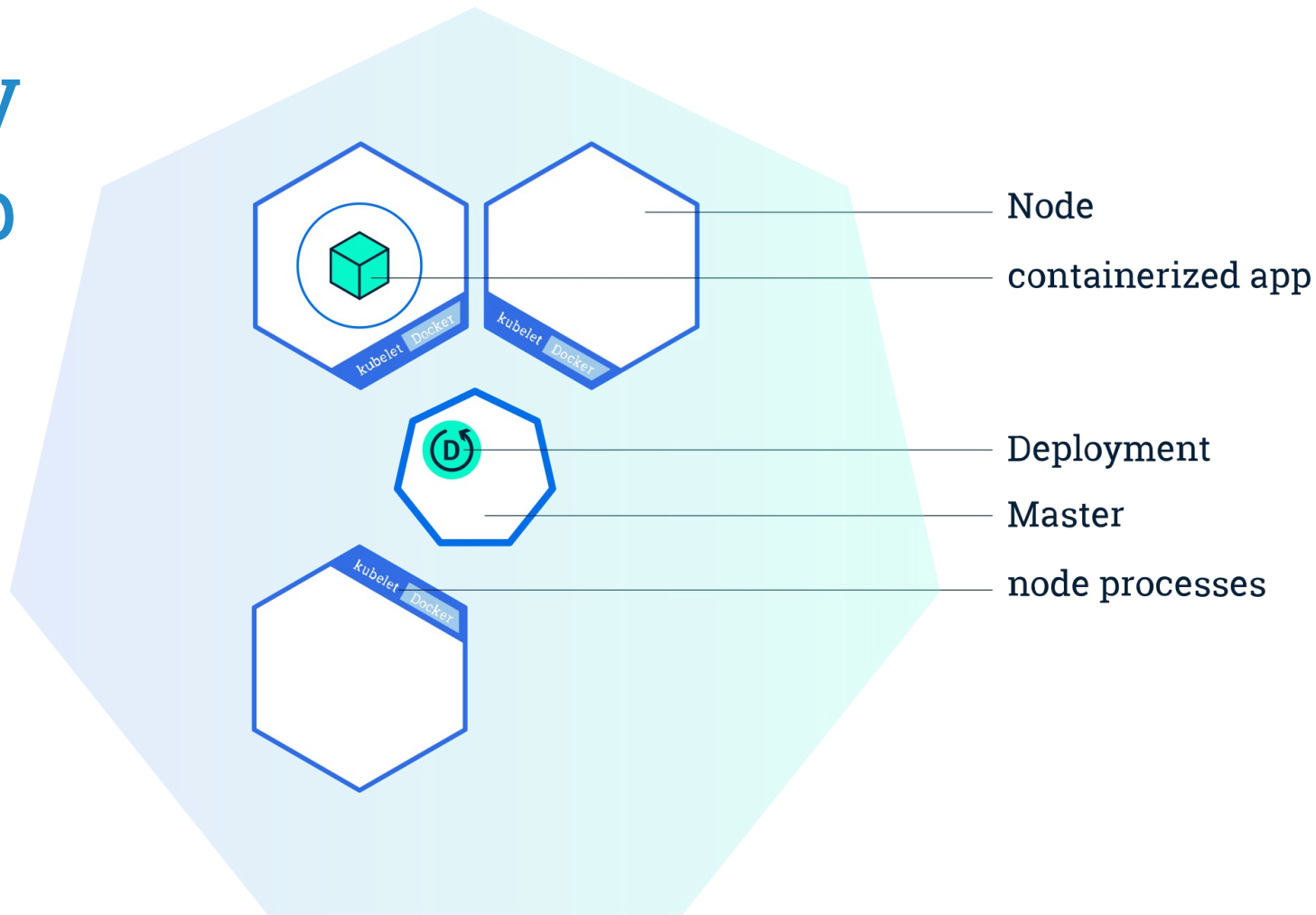
2

Kubernetes – Architecture

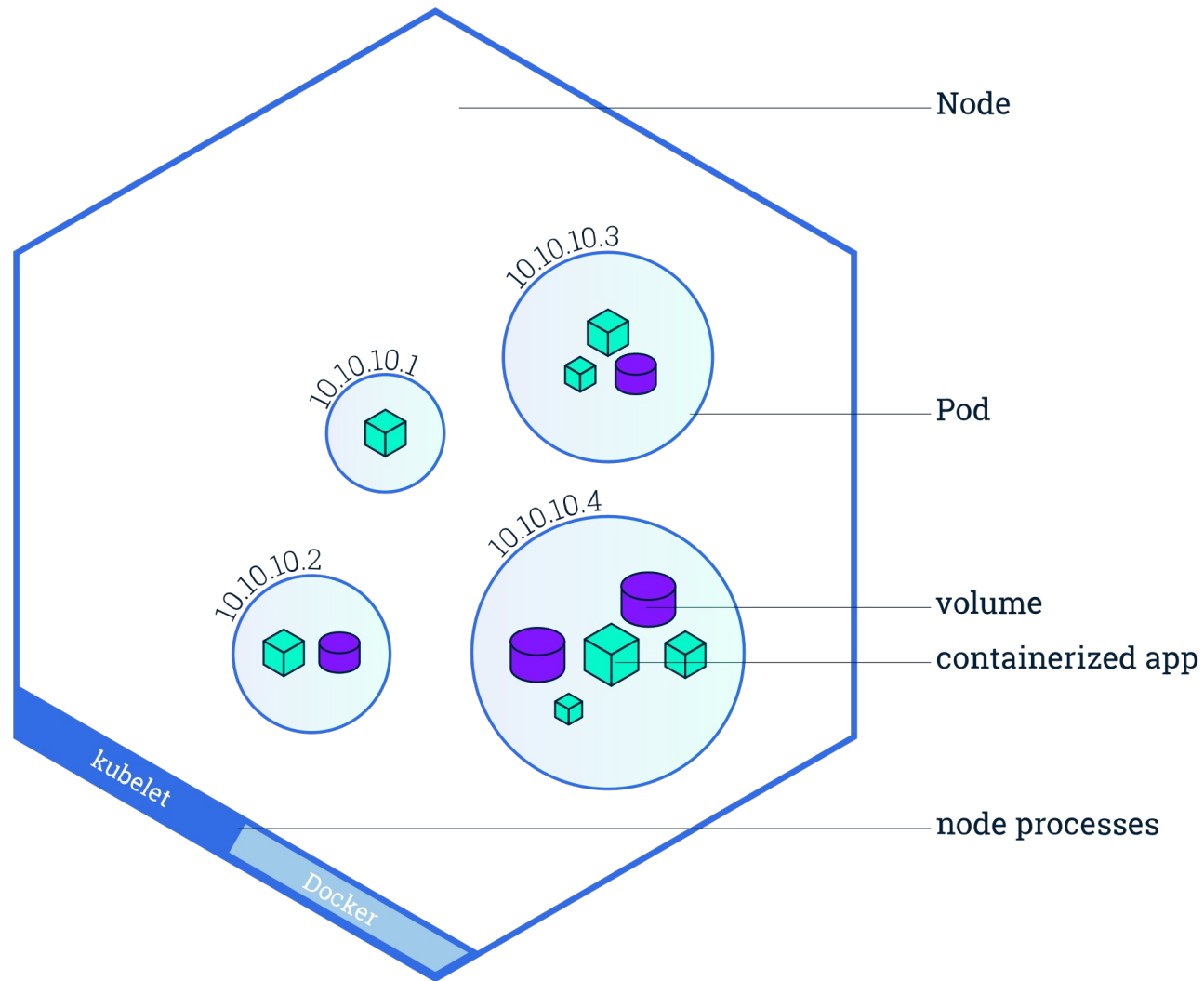
Cluster



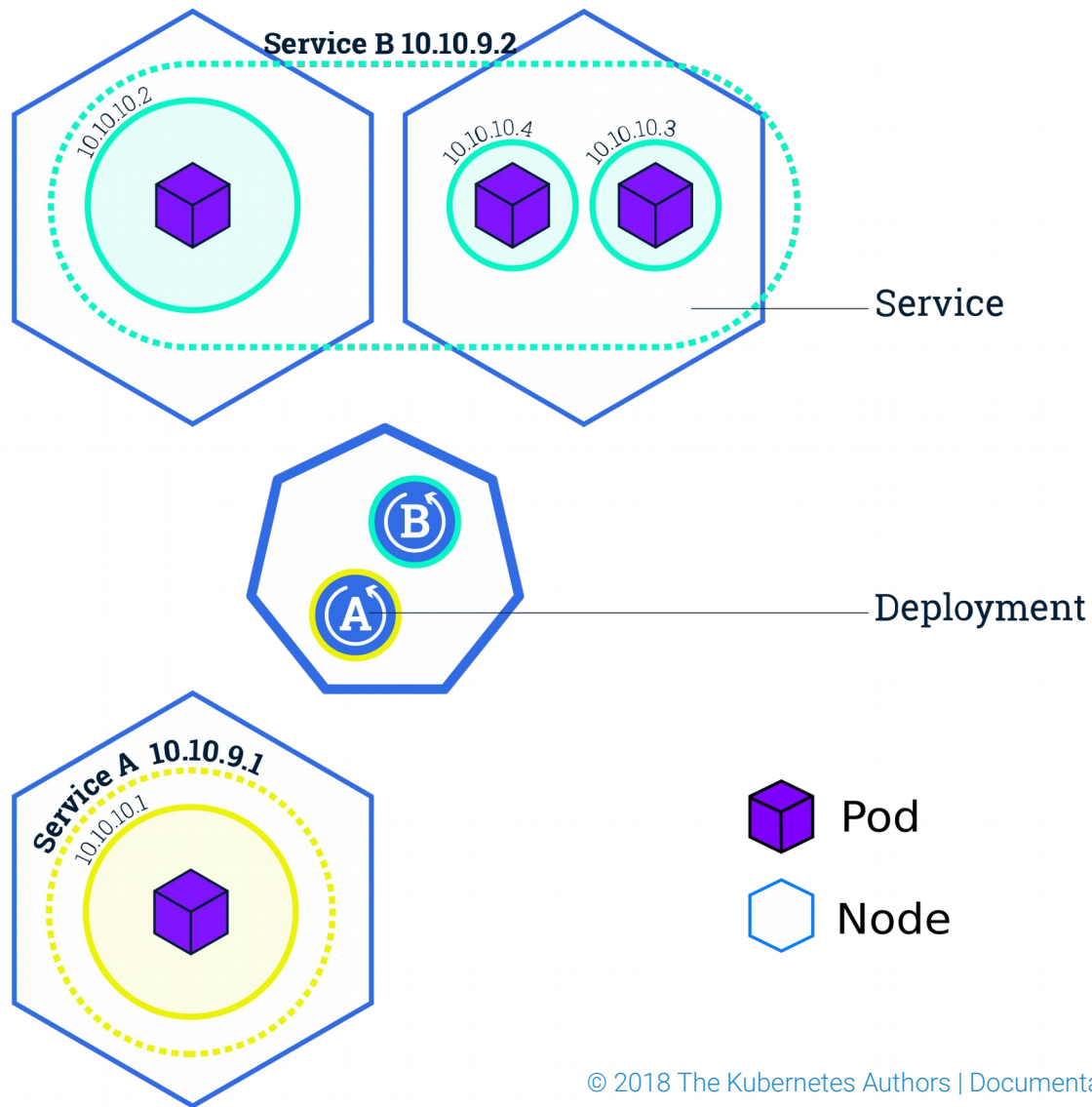
Deploy an app



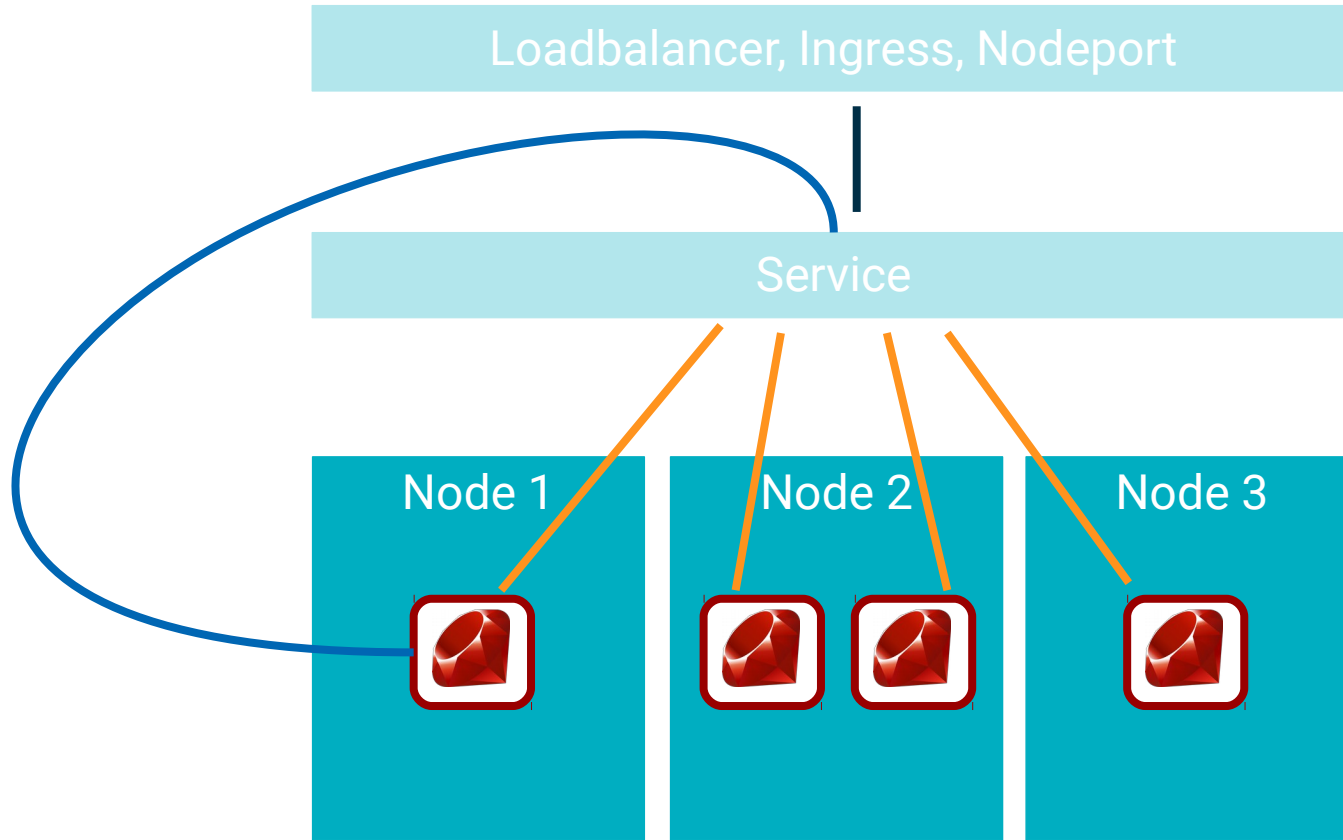
Pods



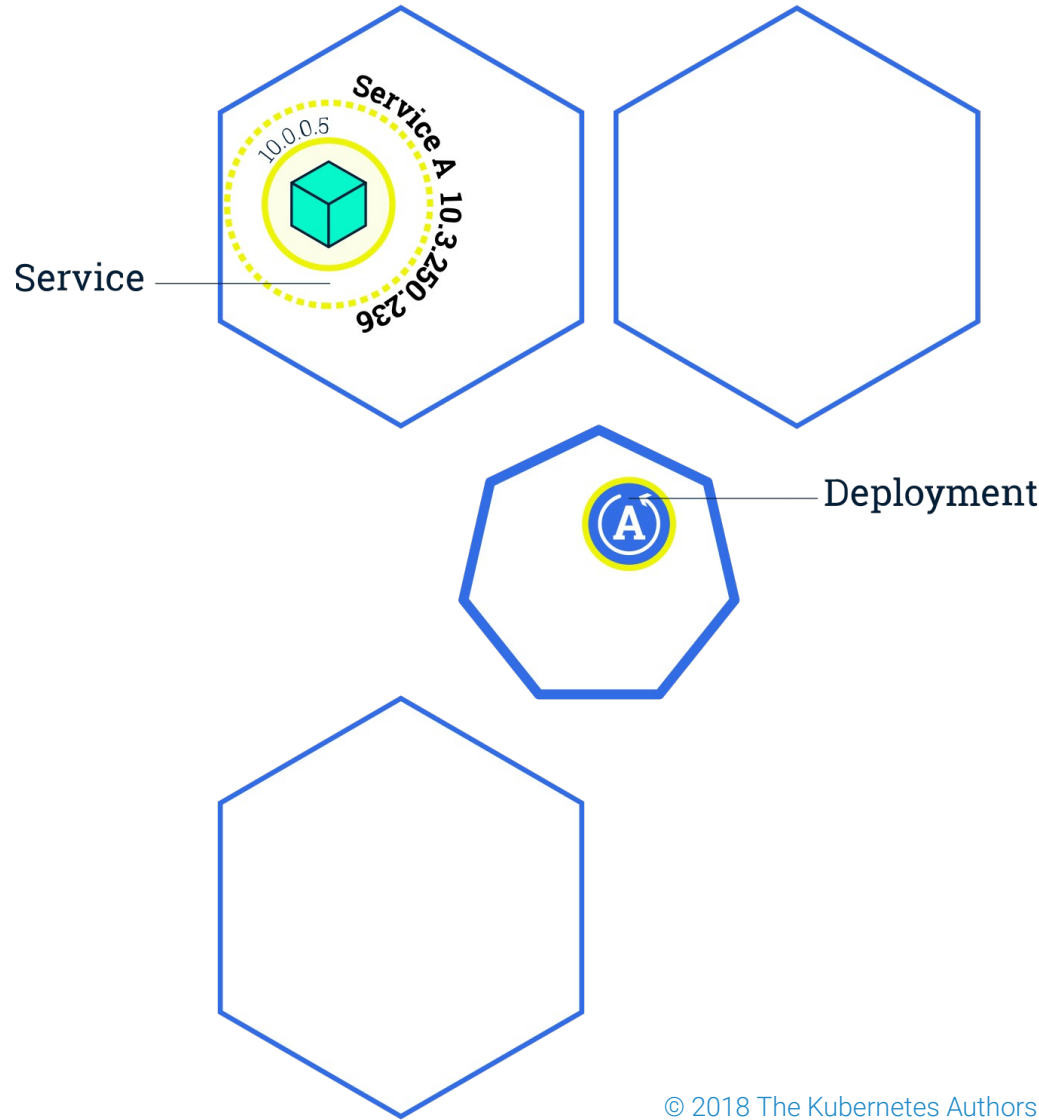
Services



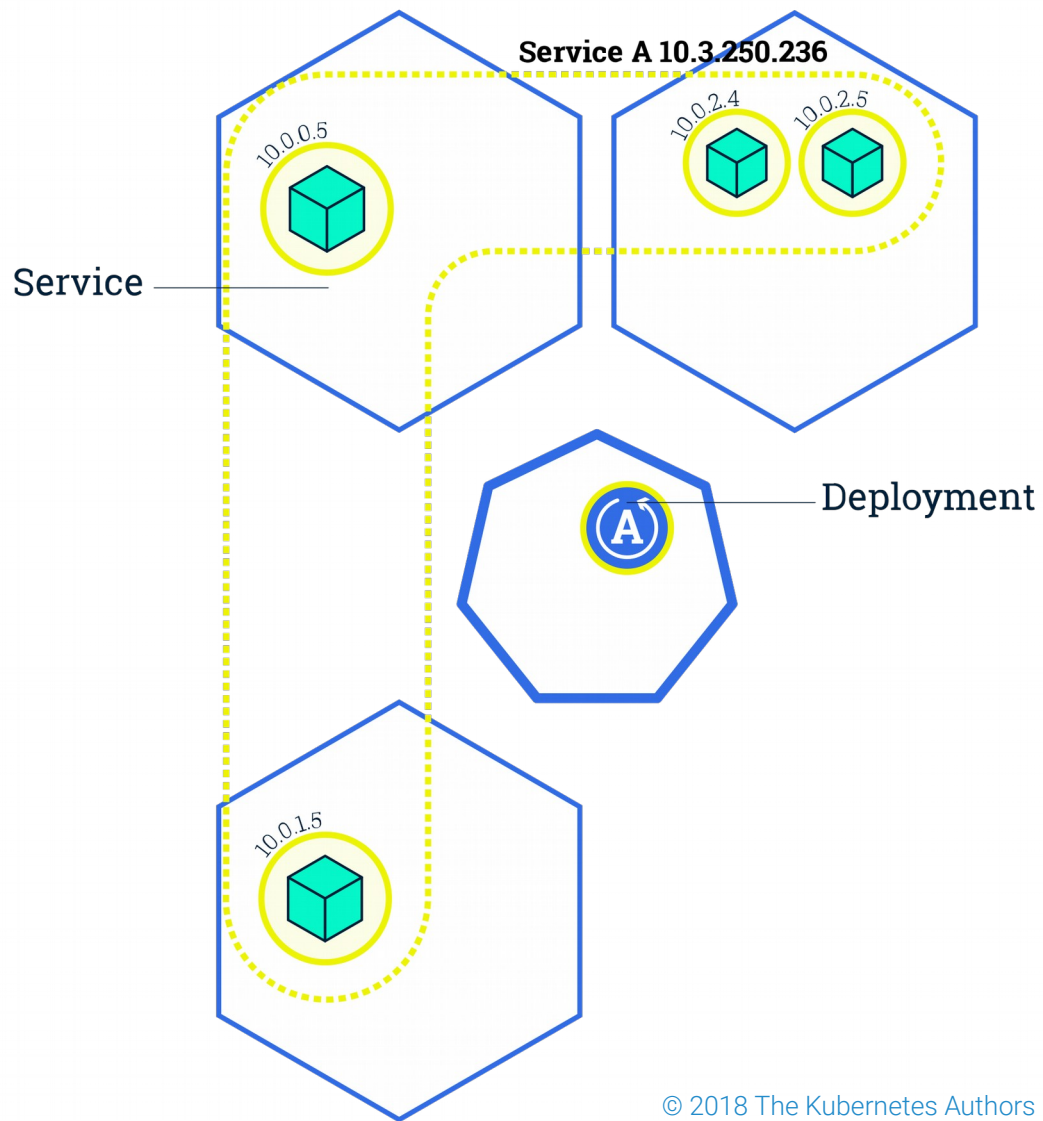
Services



Scaling



Scaling



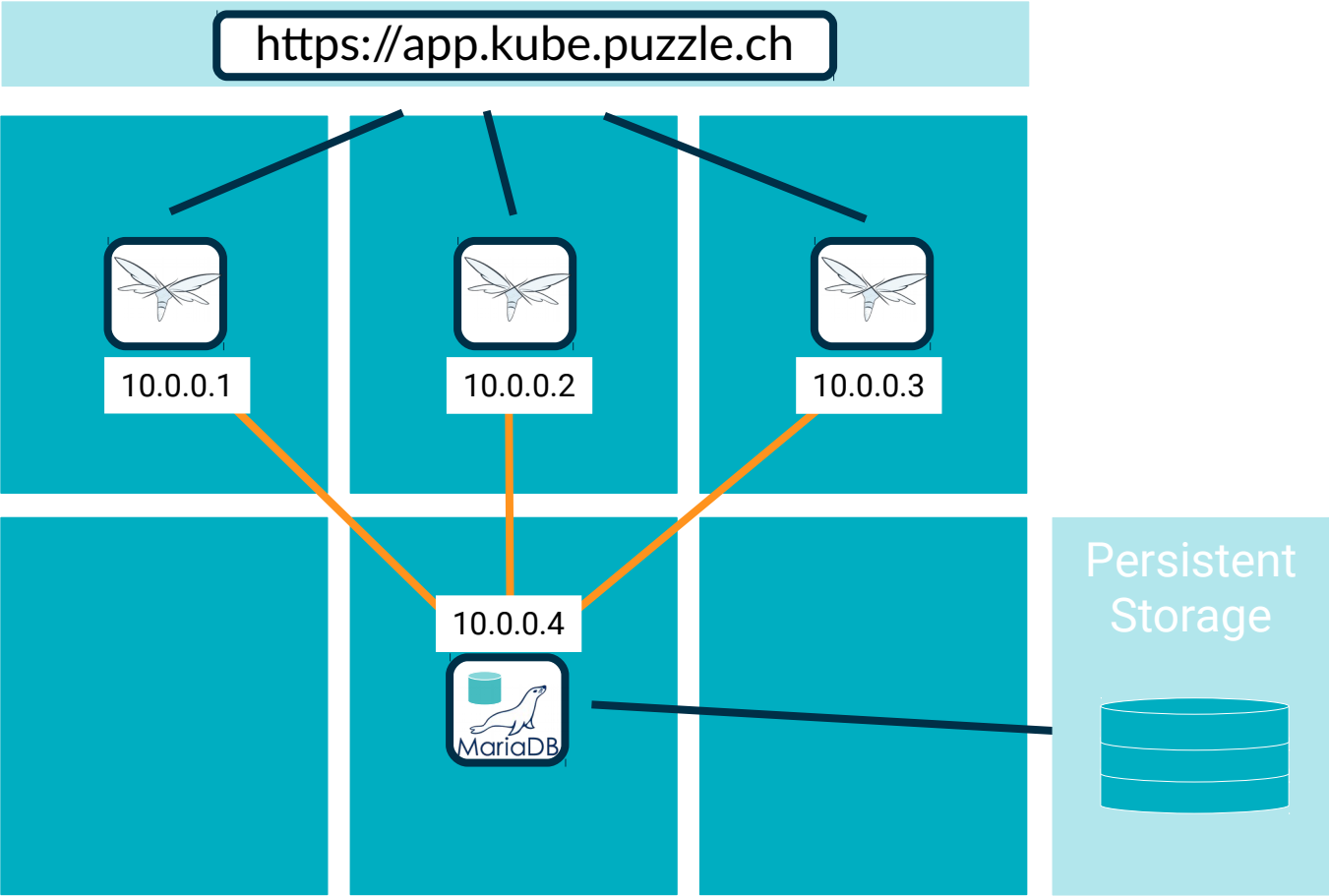
Kubernetes – Communication

- Highly-coupled container to container communication
- Pod to pod communication
- Pod to service communication
- External to service communication

Kubernetes – Network Model

- All containers can communicate with each other without NAT
- All nodes can communicate with containers without NAT
- The IP address a container sees for itself is the same address everyone else sees

Persistent storage example



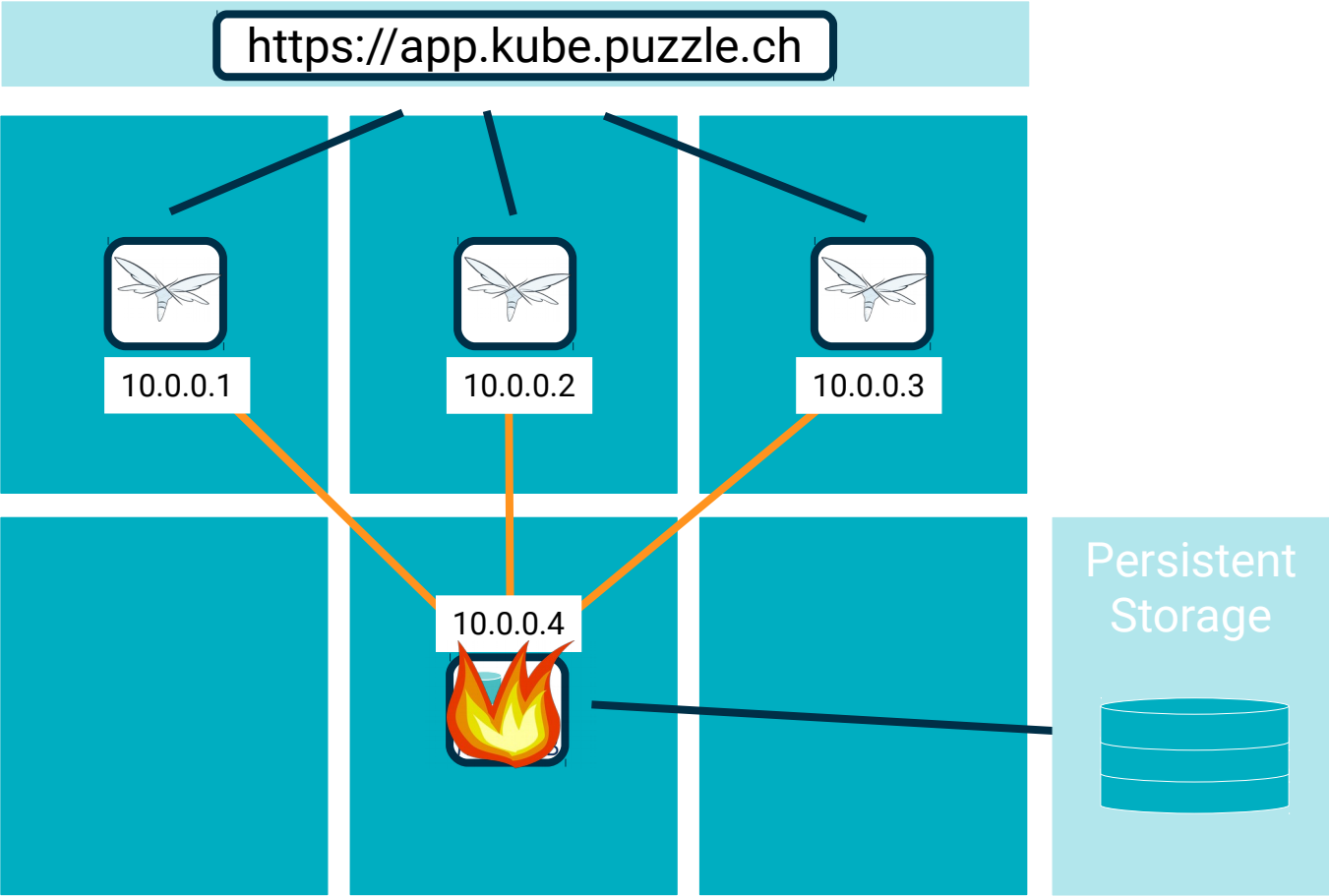
Virtual

Physical

Private Cloud

Public Cloud

Persistent storage example



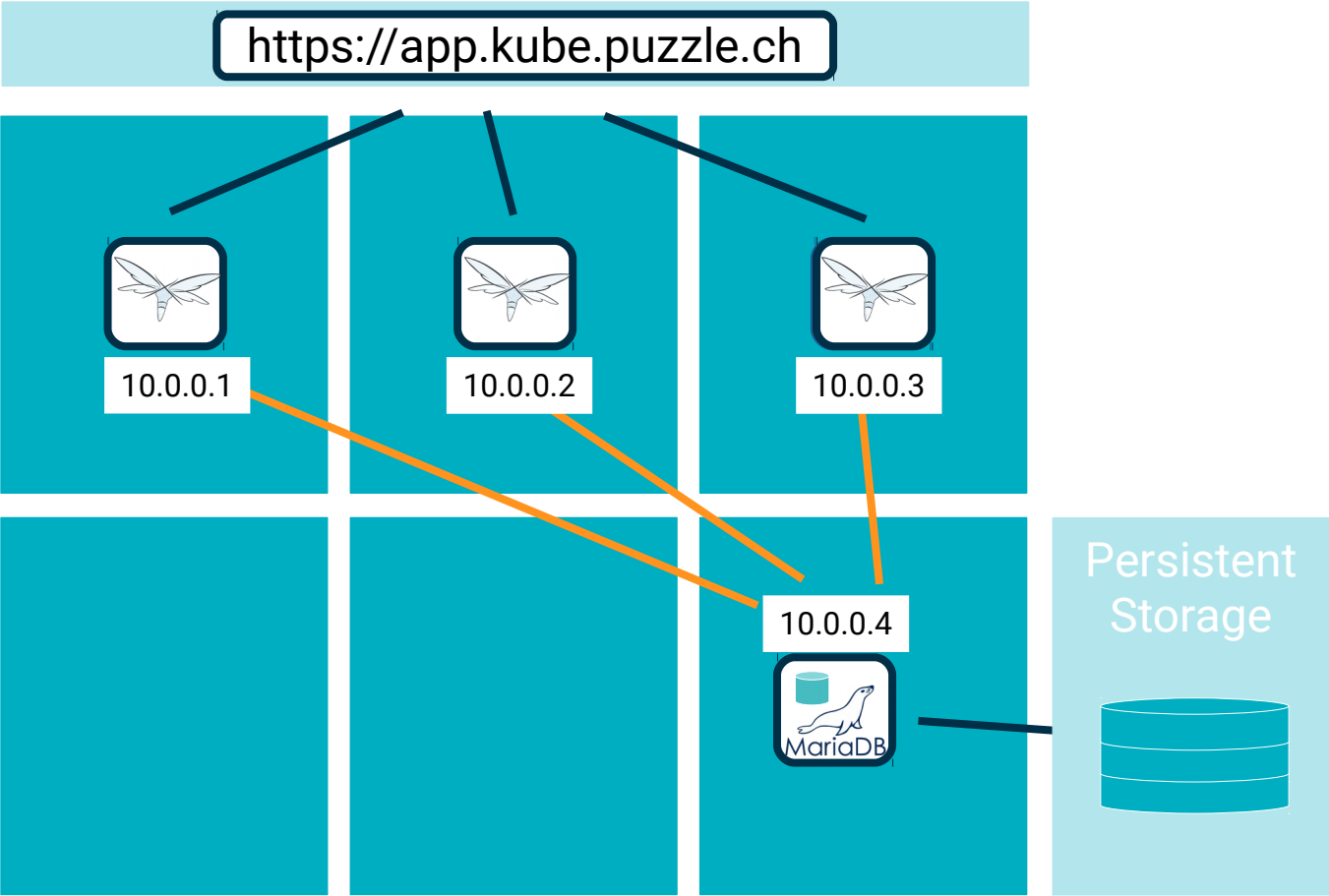
Virtual

Physical

Private Cloud

Public Cloud

Persistent storage example



Virtual

Physical

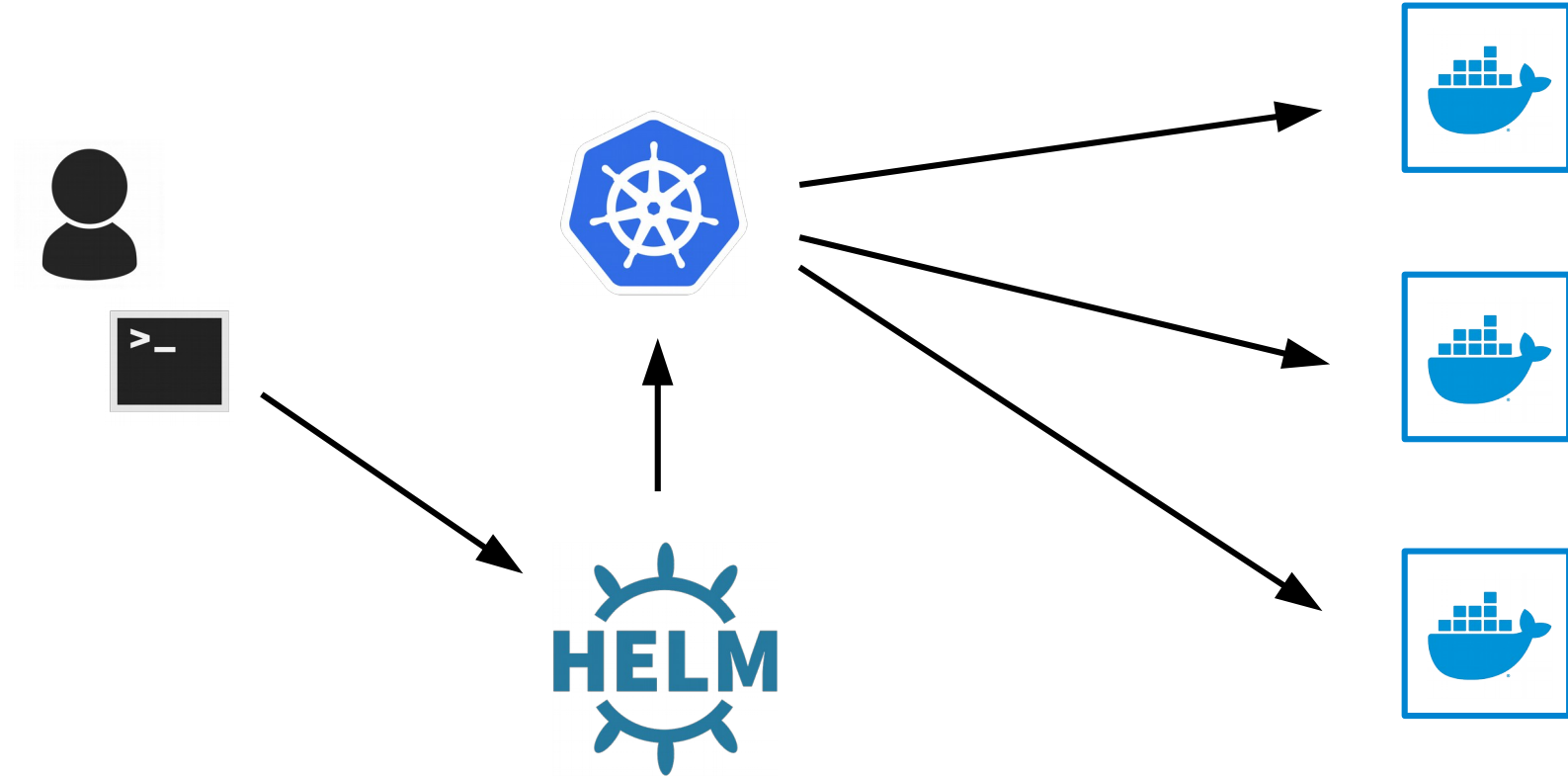
Private Cloud

Public Cloud

3

Resource Management

Kubernetes – Helm



Kubernetes – Helm

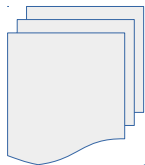
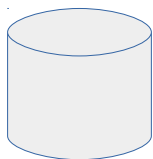
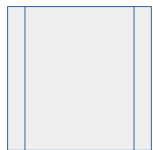


Chart: Kubernetes resources package



Repository: Collection of public charts



Release: Load Chart Instance

Kubernetes – Kustomize

```
~/someApp
├── base
│   ├── deployment.yaml
│   ├── kustomization.yaml
│   └── service.yaml
└── overlays
    ├── development
    │   ├── cpu_count.yaml
    │   ├── kustomization.yaml
    │   └── replica_count.yaml
    └── production
        ├── cpu_count.yaml
        ├── kustomization.yaml
        └── replica_count.yaml
```

Thank you!

