Sitecore on Azure Kubernetes Service

Rob Earlam
Technical Evangelist - Sitecore

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Rob Earlam

Sitecore Technical Evangelist

https://robearlam.com

https://github.com/robearlam

https://twitter.com/robearlam

https://www.linkedin.com/in/rob-earlam/

What is Kubernetes (K8s)

"Kubernetes is a portable, extensible, open-source platform for managing containerized workloads and services, that facilitates both declarative configuration and automation. It has a large, rapidly growing ecosystem. Kubernetes services, support, and tools are widely available."

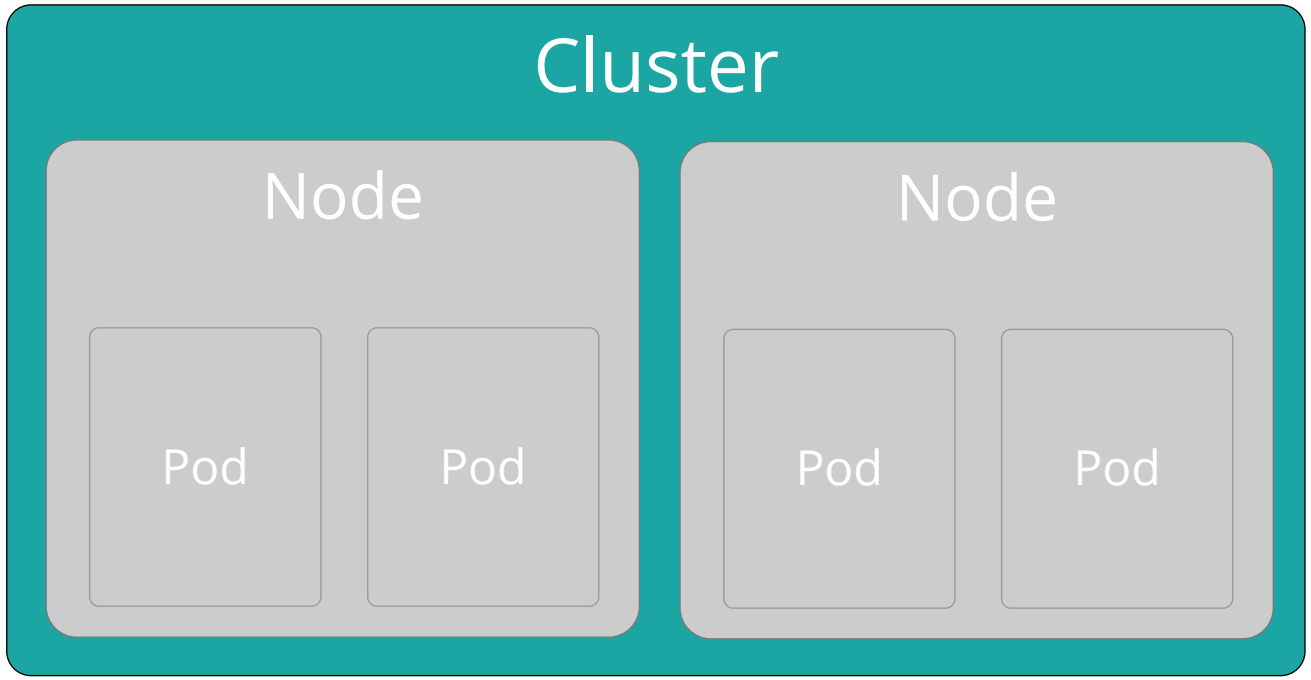
https://kubernetes.io/docs

Why do you need K8s?

- Service discovery and load balancing
- Storage orchestration
- Automated rollouts and rollbacks
- Self-healing
- Secret and configuration management

Cluster

A cluster is the Kubernetes foundation. All the Kubernetes objects that represent your containerized applications all run on top of a cluster.



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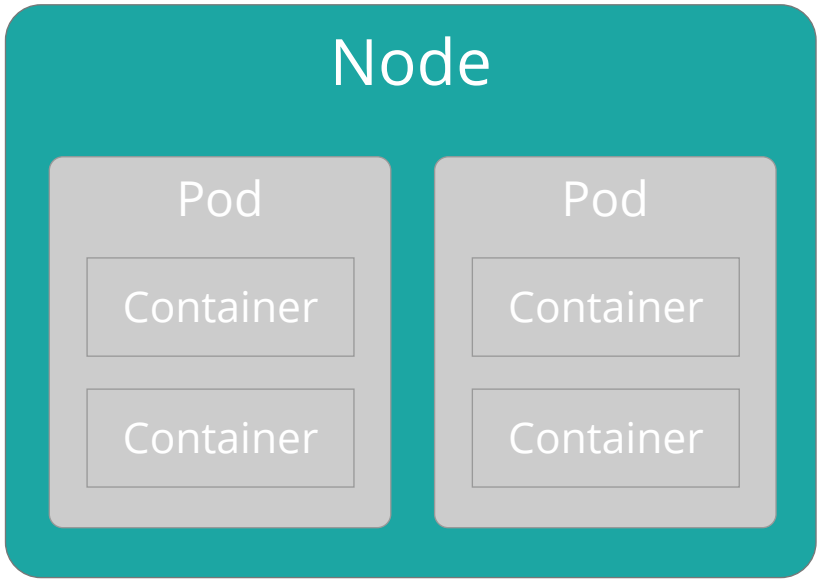
Node

A Node is a worker machine in Kubernetes and may be either a virtual or a physical machine, depending on the cluster.



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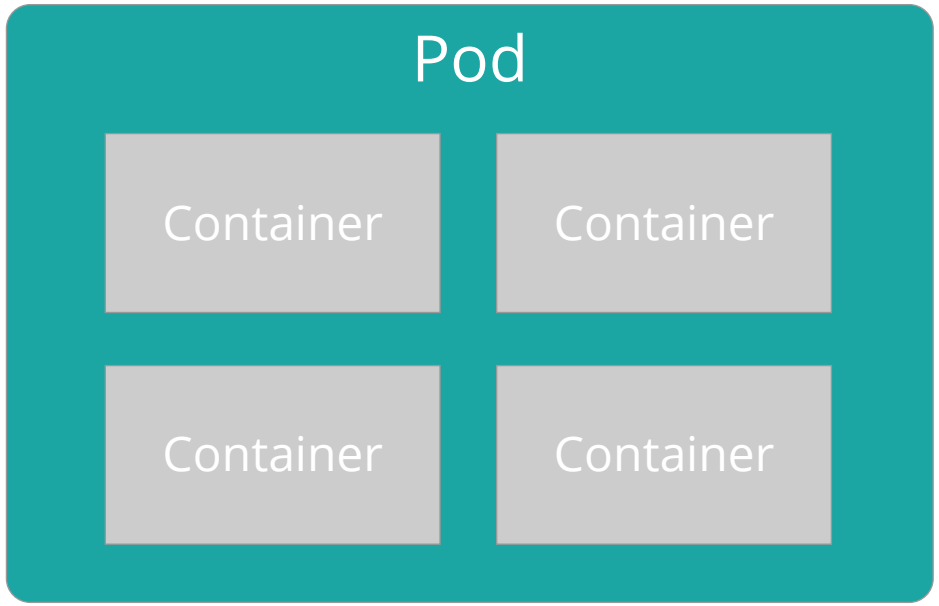
Pod

A Pod is the smallest and simplest unit in the Kubernetes object model. One or multiple containers that are working closely together are bundled in a Pod together.



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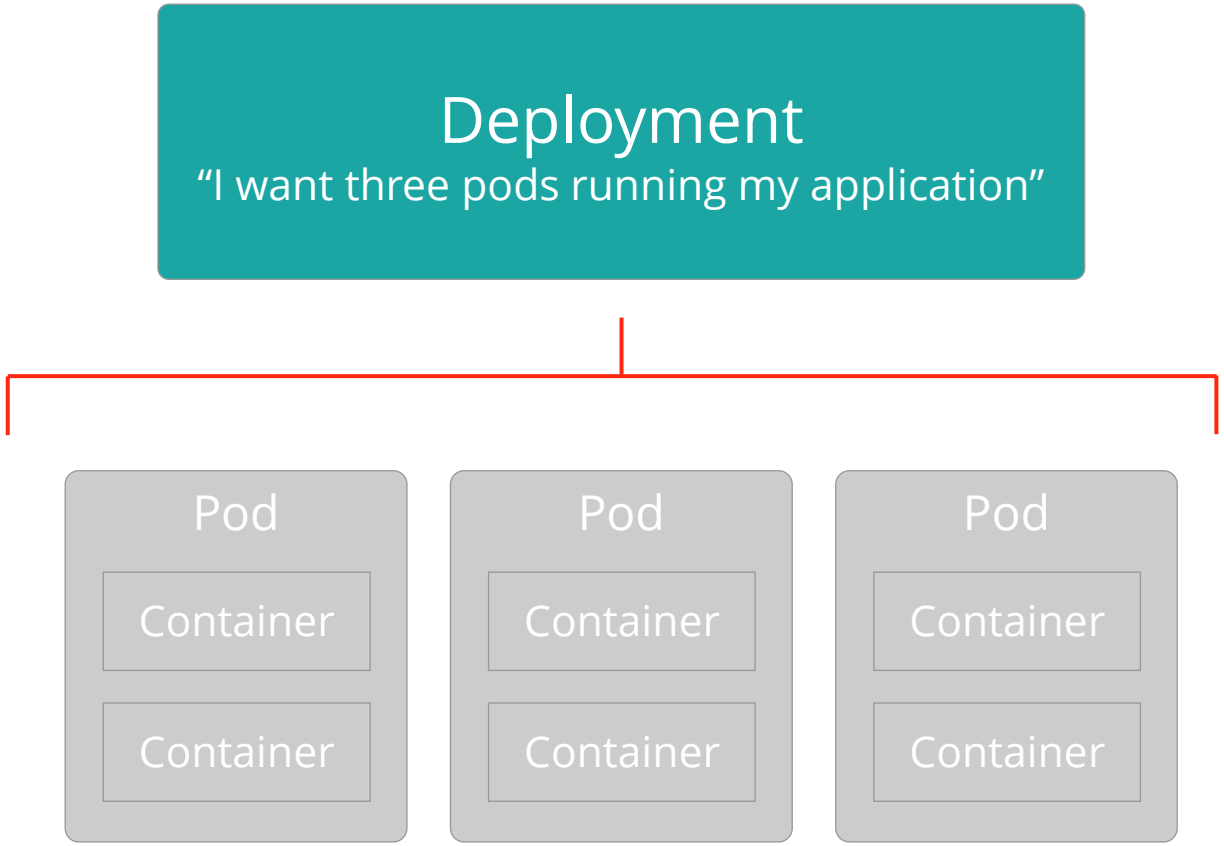
Deployment

A Deployment represents a desired state for one or more pods.



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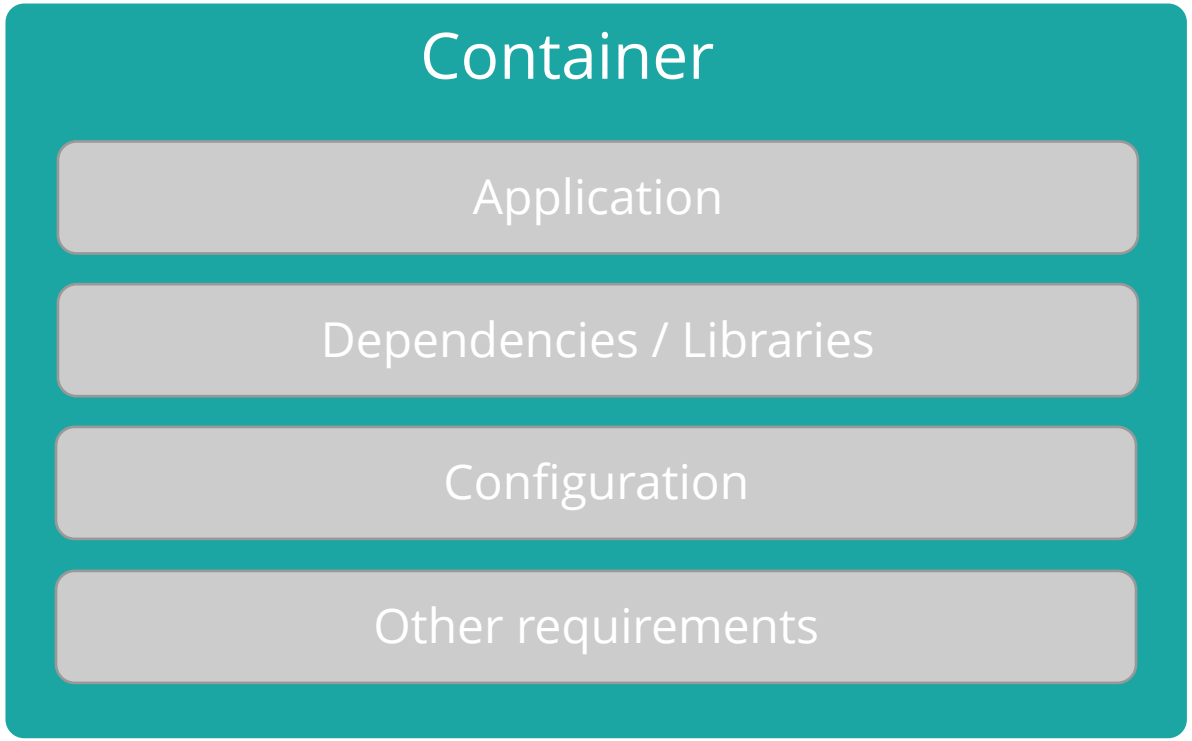
Container

A container image is a ready-to-run software package, containing everything needed to run an application.



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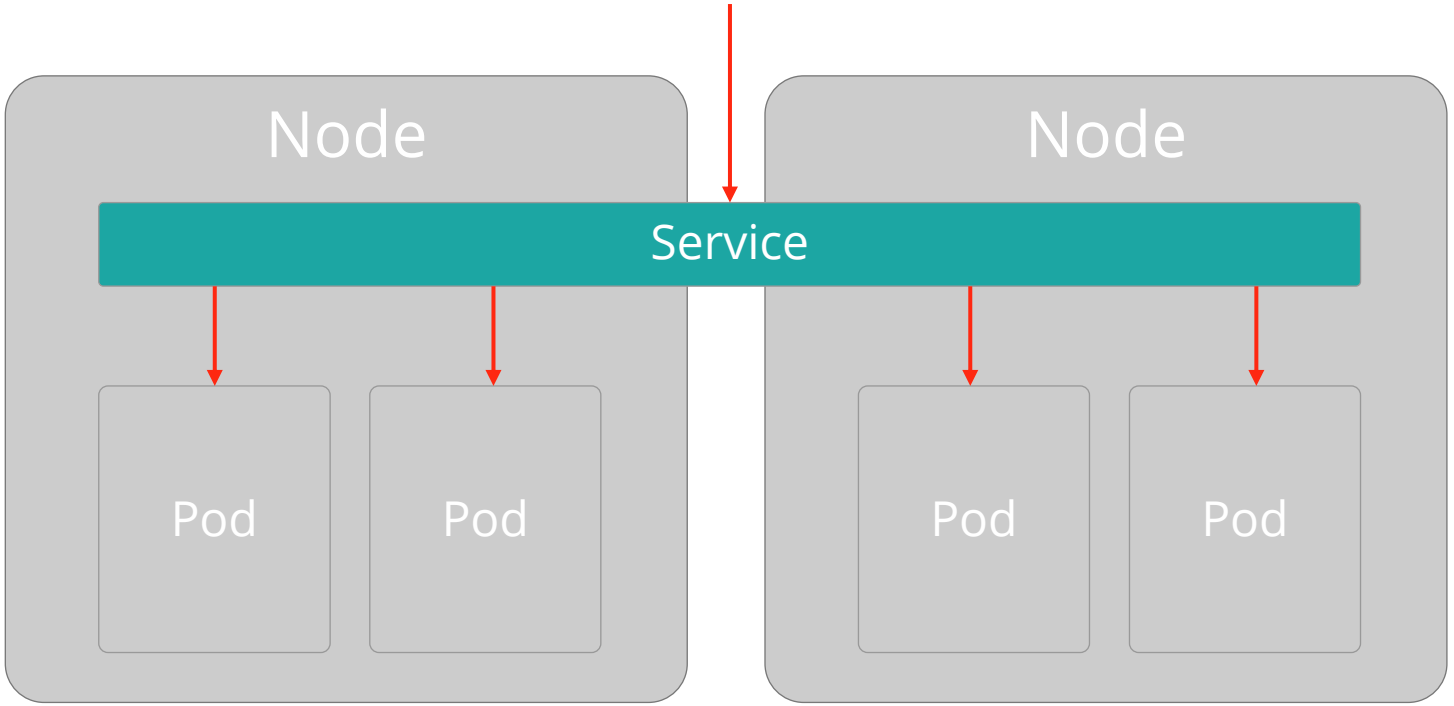
Service

A Service provides an abstract way to expose an application running on a set of Pods as a network service.



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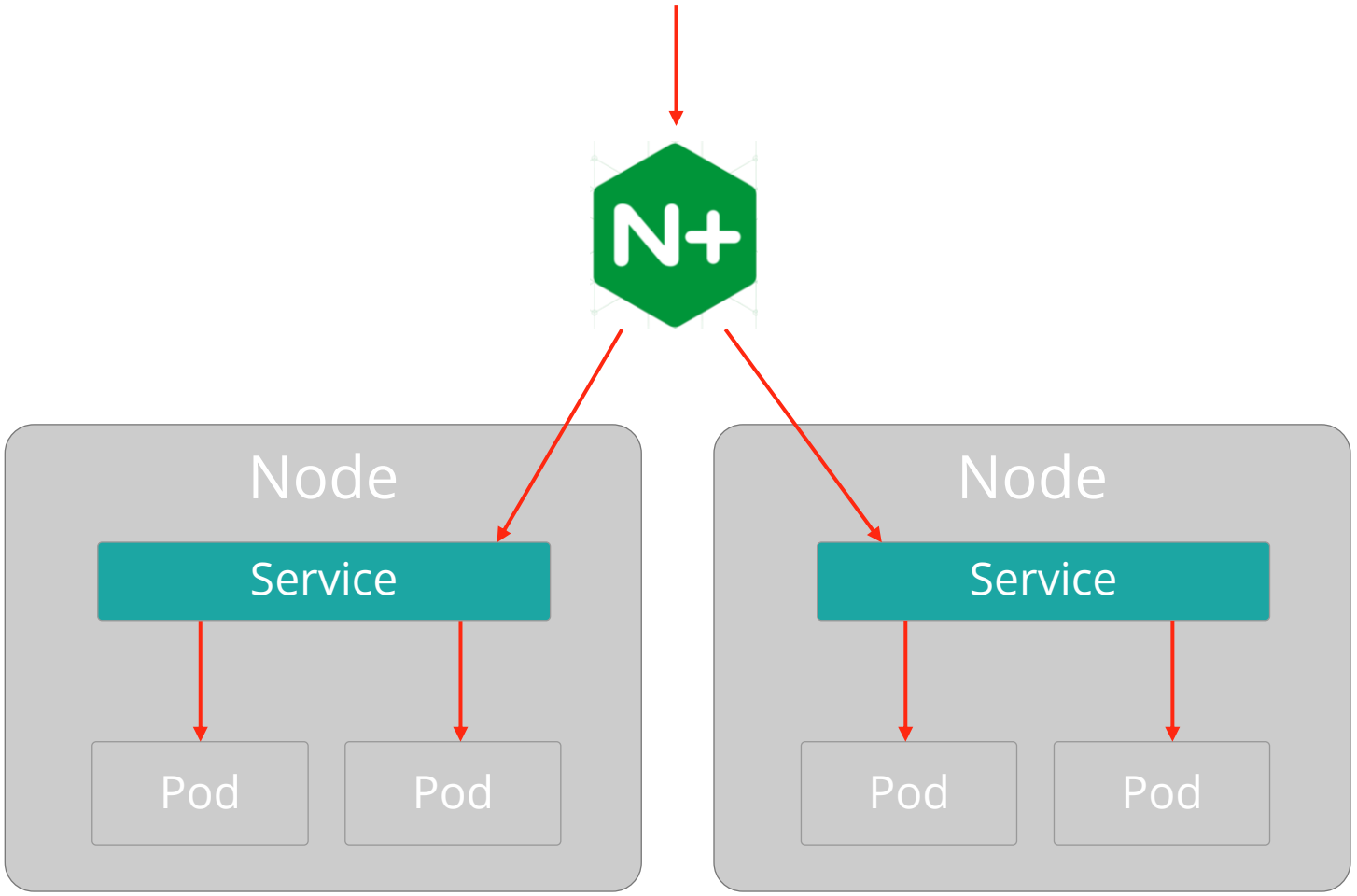
Ingress

An API object that manages external access to the services in a cluster, typically HTTP.



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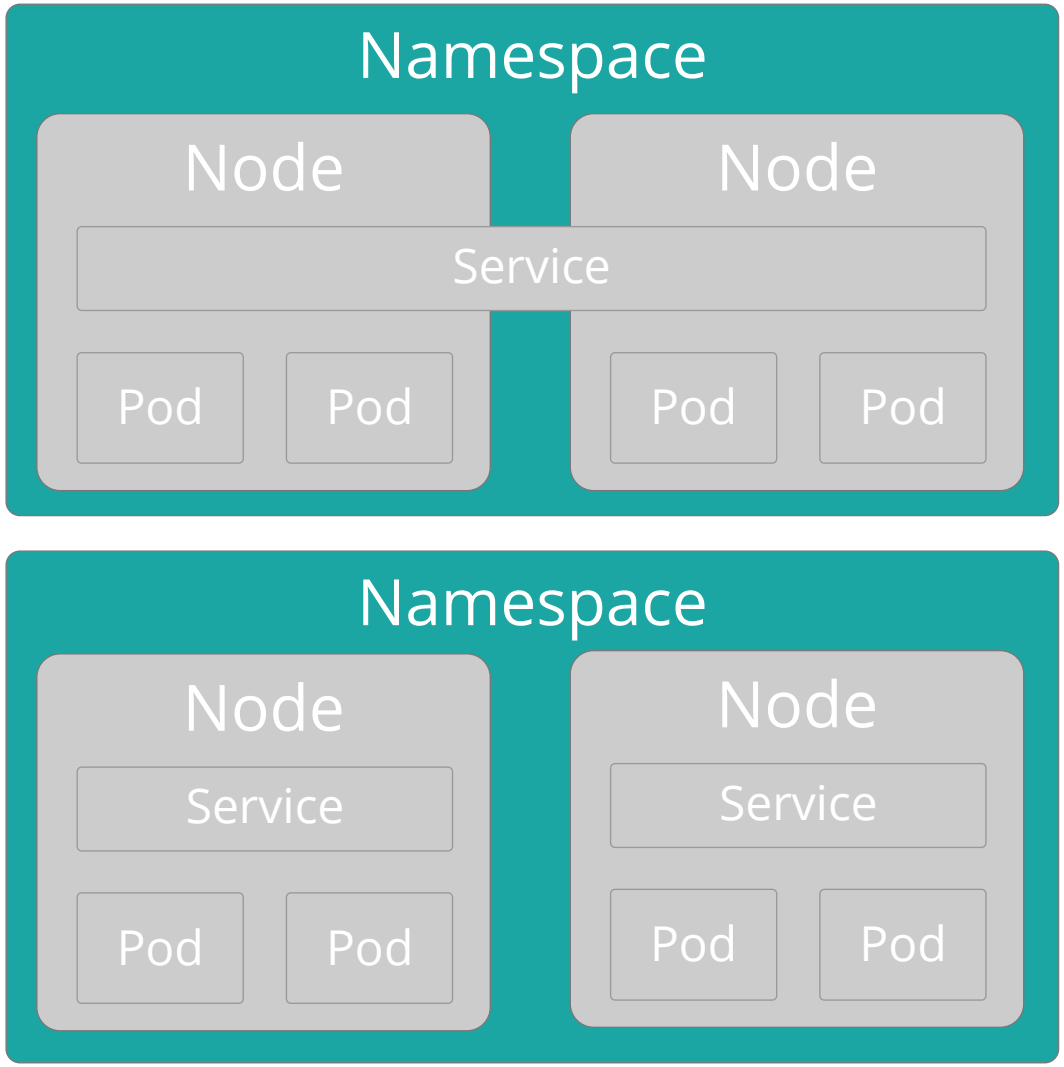
Namespace

A namespace is used to group related resources within a cluster.

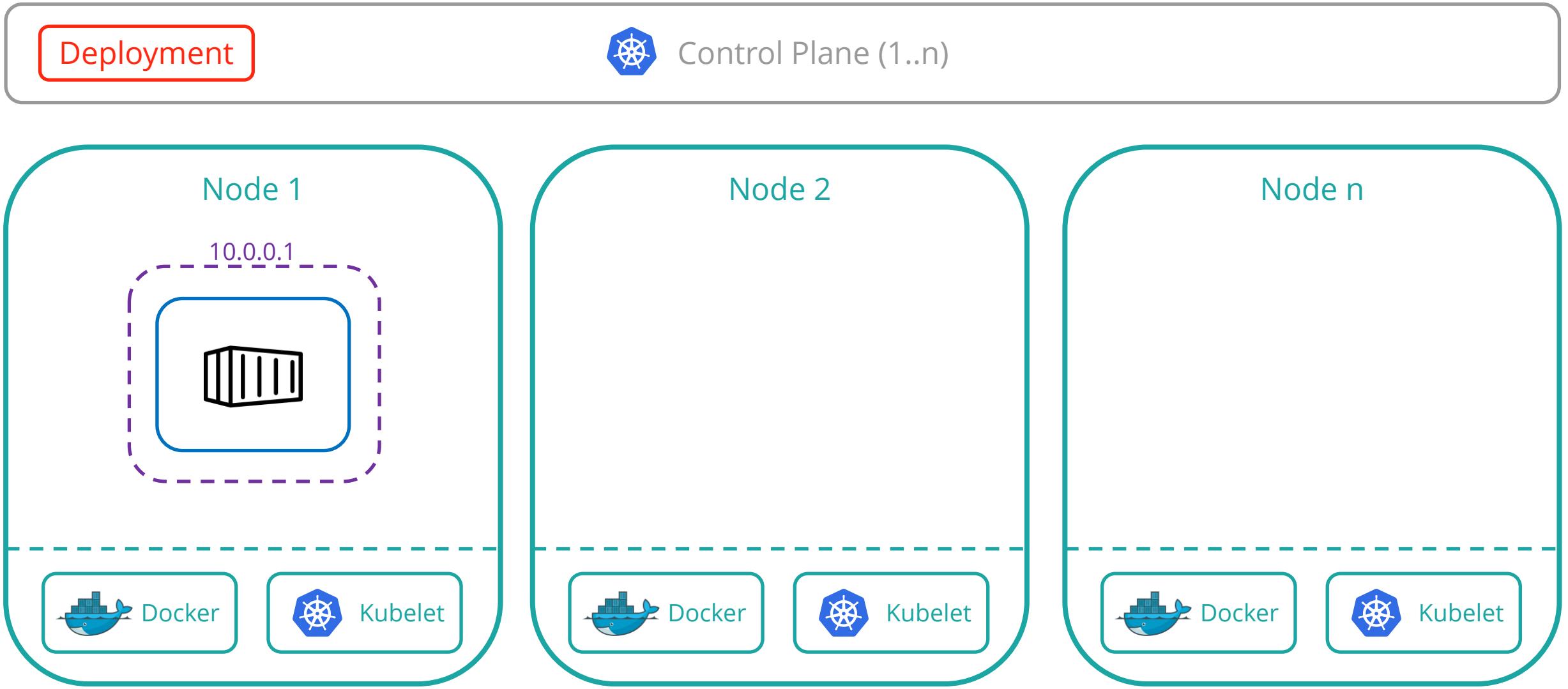


Secrets

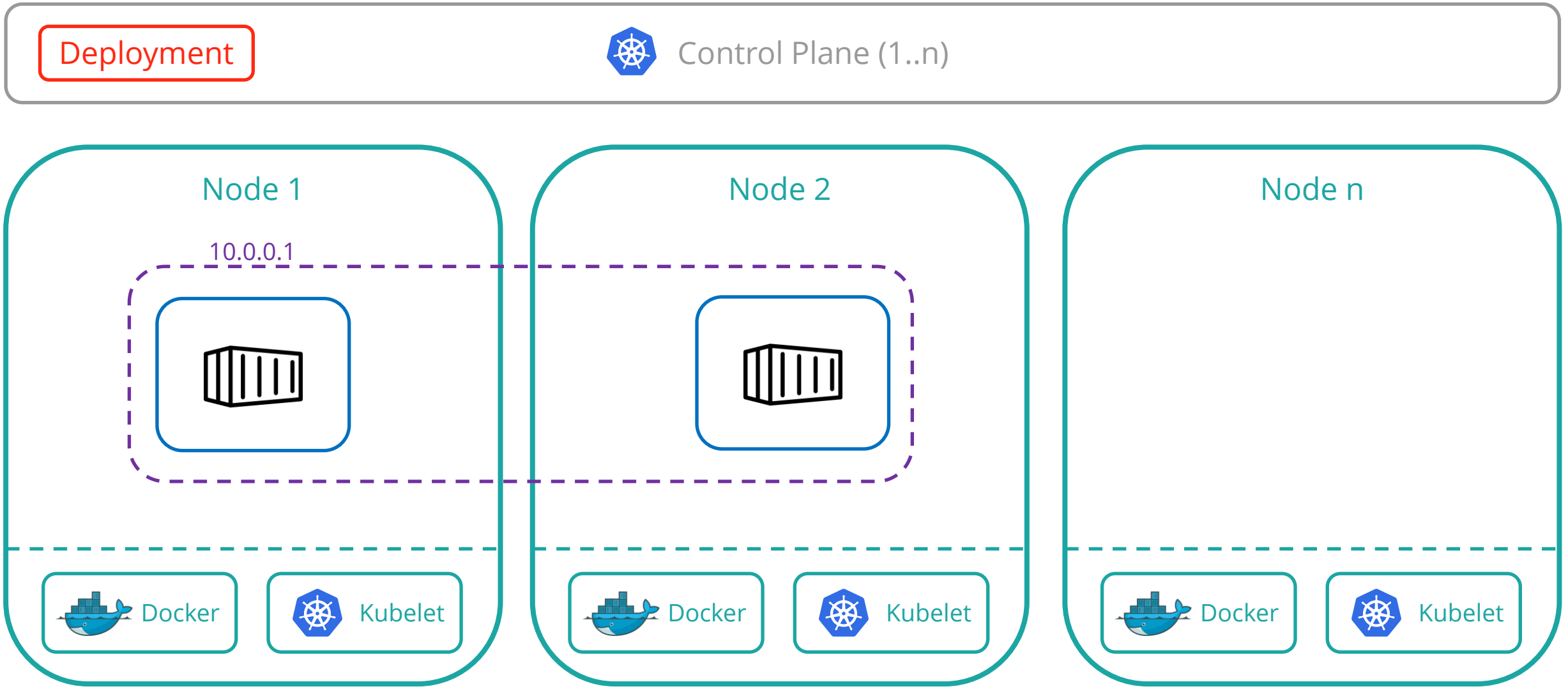
- Kubernetes Secrets let you store and manage sensitive information, such as:
  - Passwords
  - OAuth tokens
  - SSH keys

- Storing confidential information in a Secret is safer and more flexible than storing it directly in a Container Image.

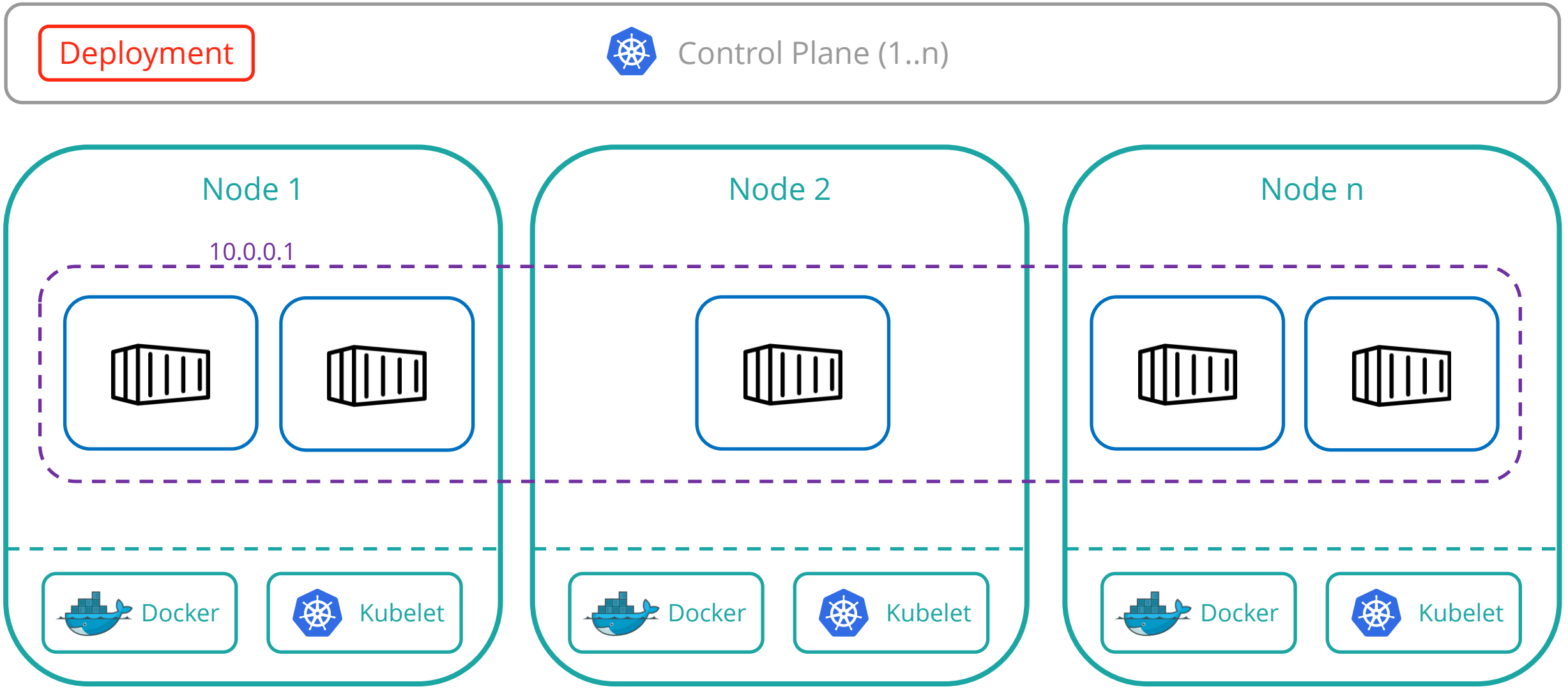
K8s Concepts



K8s Concepts



K8s Concepts



What is Azure Kubernetes Service (AKS)?

Microsoft's Managed K8s Service

- Elastic Provisioning
- Integrated with VSCode
- Identity Management through AAD
- Available in 36+ regions
- Available with both Linux & Windows nodes

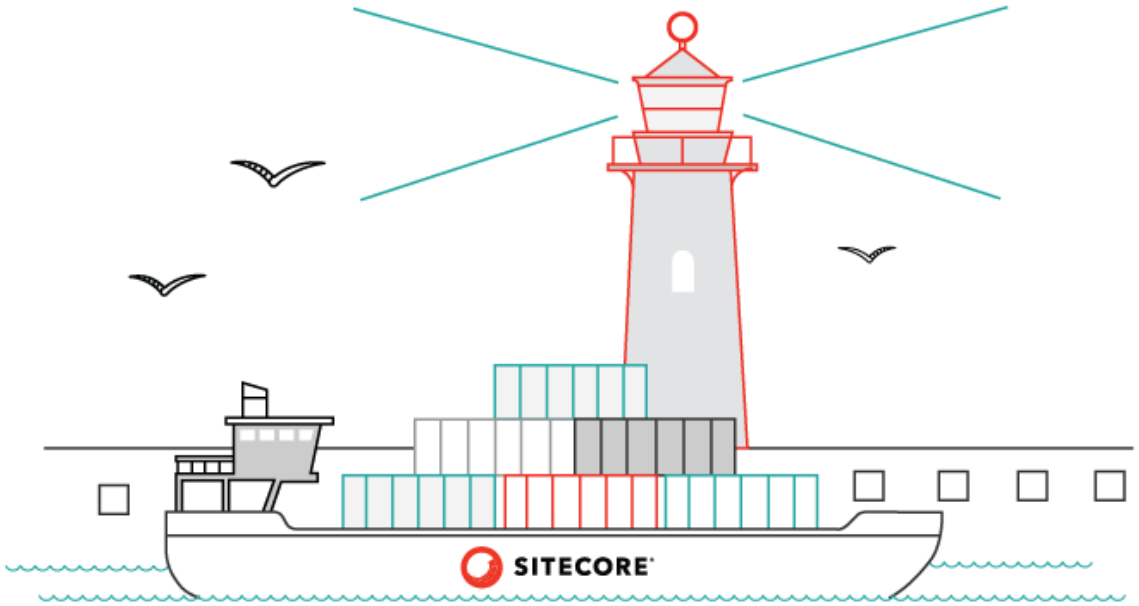
Sitecore on AKS

What's available?

- Full set of Kubernetes Specifications
- Complete installation guide
- Available today on https://dev.sitecore.net/

What is and isn't supported?

- Application containers fully supported
- Data storage containers need to be a in separate Node Pool




Demo Time!
@RobEarlam

Closing Thoughts

- Leverage industry standard Kubernetes Tooling
- Make sure you secure your cluster
- Plan how to setup your Data Storage roles in production
  - SQL, Solr, Redis
- Read Microsoft's AKS best practices - https://docs.microsoft.com/en-us/azure/aks/best-practices
- MVP Site - https://github.com/Sitecore/MVP-Site

Thank you