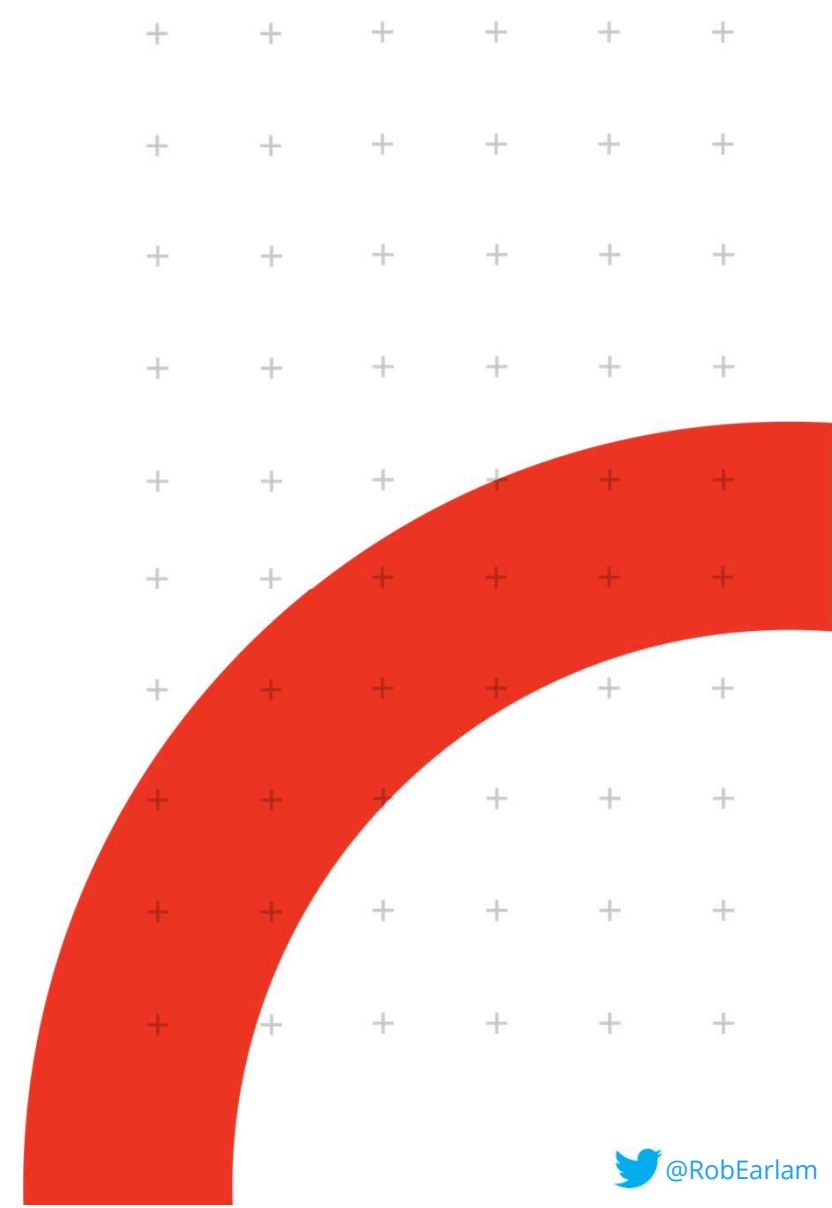




# Kick off Kubernetes for Sitecore

**Rob Earlam**  
Technical Evangelist - Sitecore

November 2020





## Rob Earlam

Sitecore Technical Evangelist

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<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?



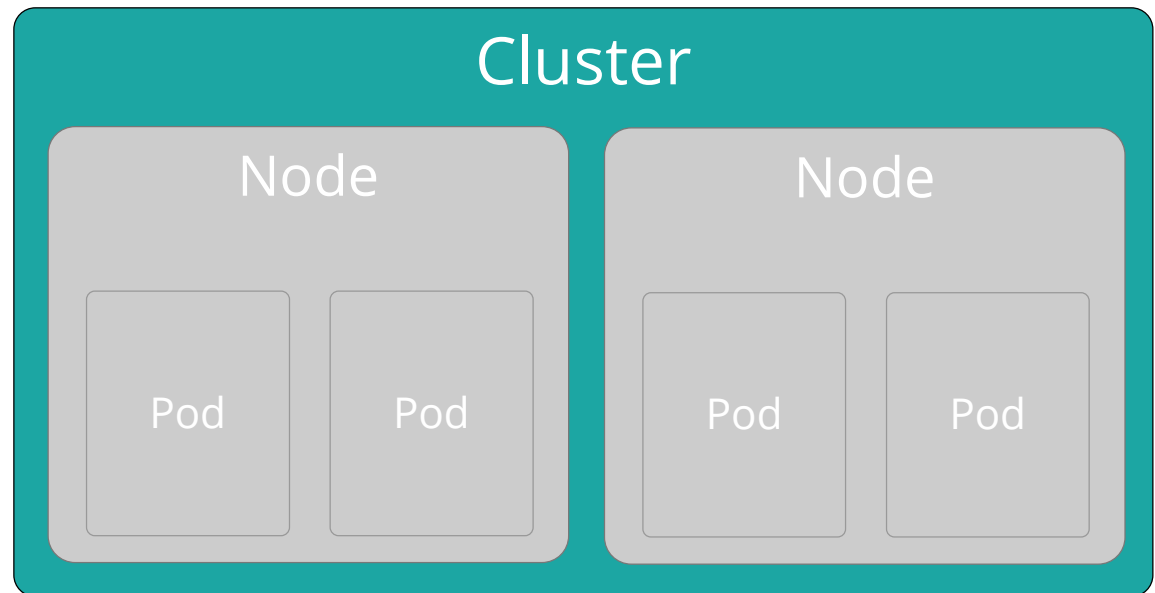
- Service discovery and load balancing
- Storage orchestration
- Automated rollouts and rollbacks
- Self-healing
- Secret and configuration management





## Cluster

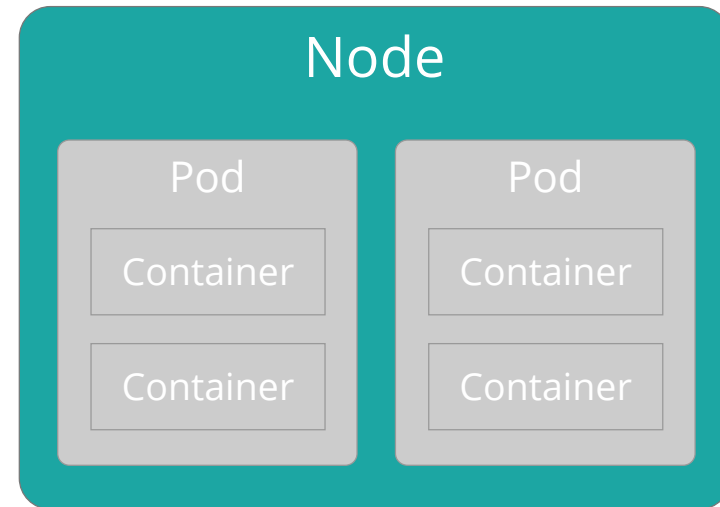
A cluster is the Kubernetes foundation. All the Kubernetes objects that represent your containerized applications all run on top of a cluster.





## Node

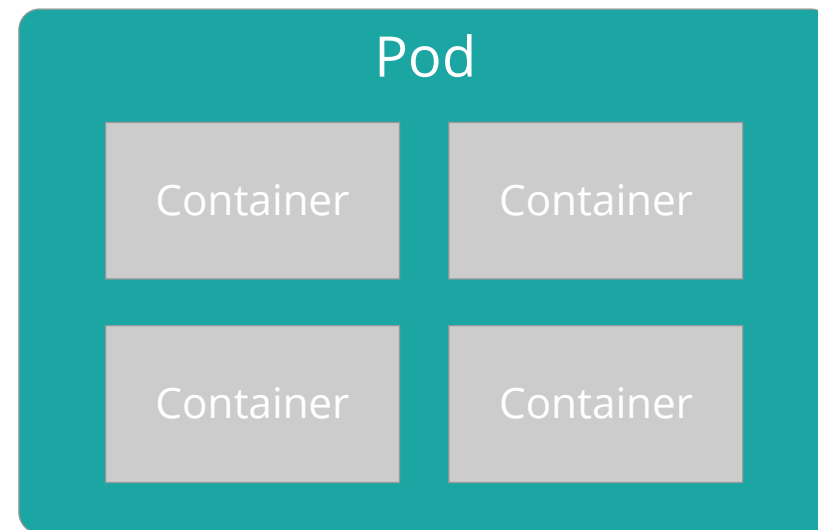
A Node is a worker machine in Kubernetes and may be either a virtual or a physical machine, depending on the cluster.





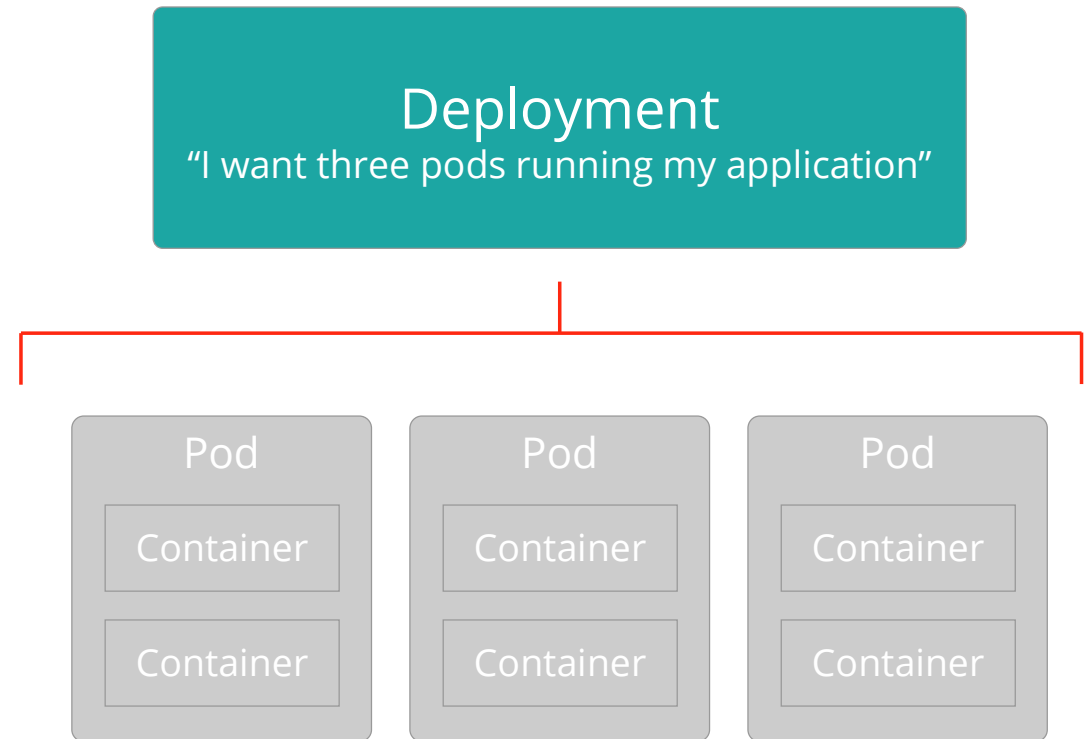
## Pod

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.



## Deployment

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

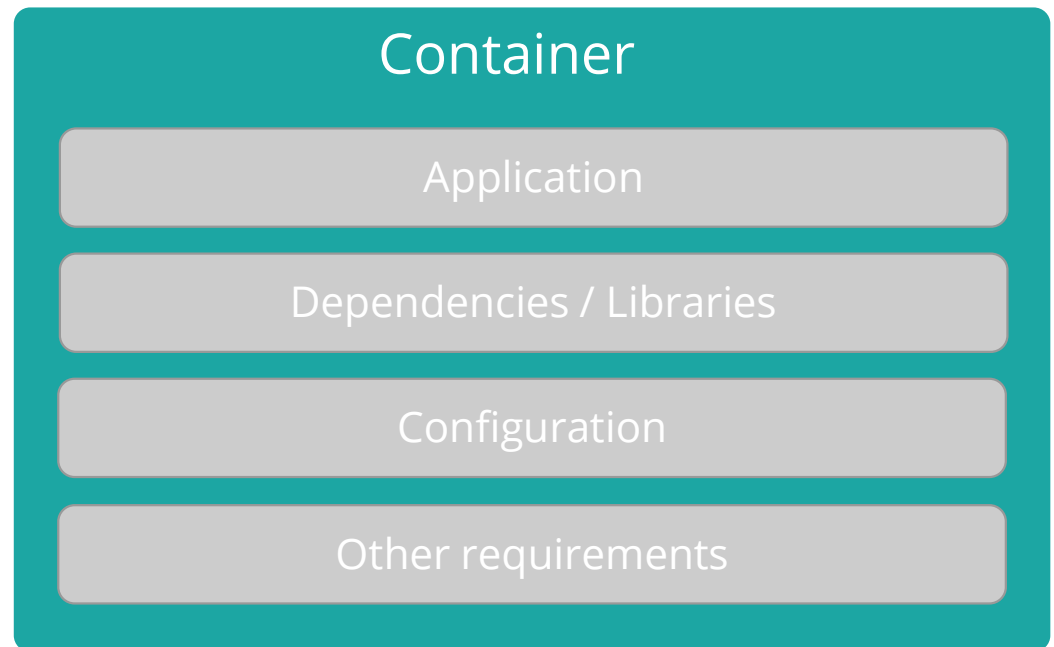






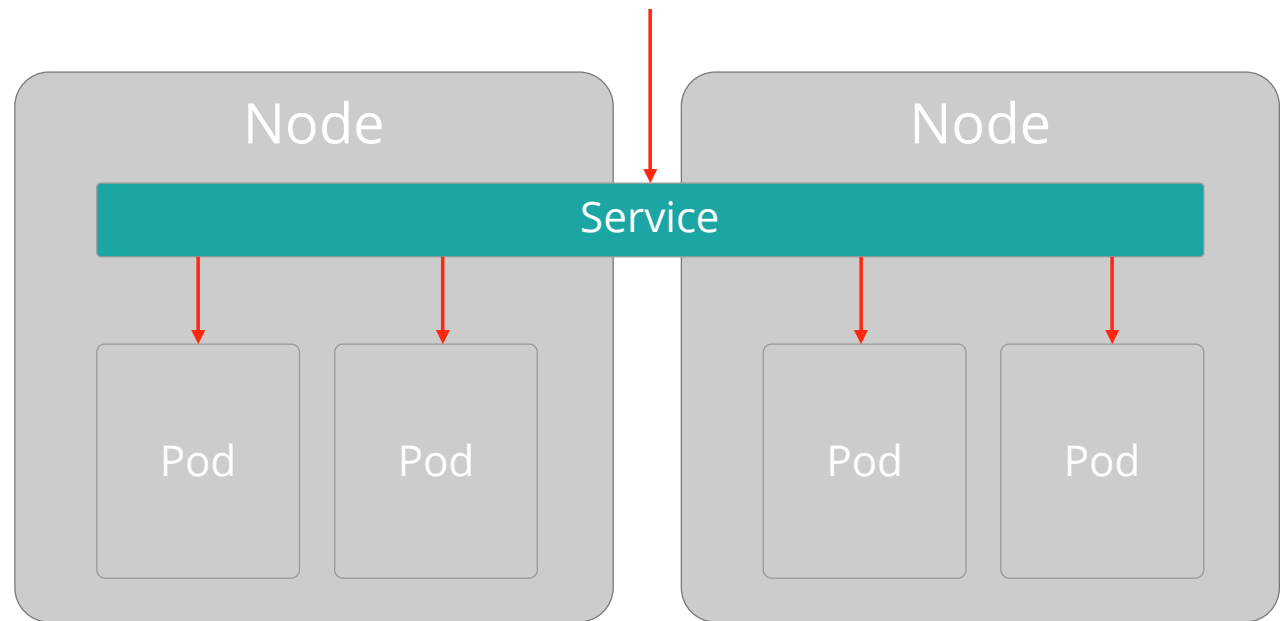
## Container

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



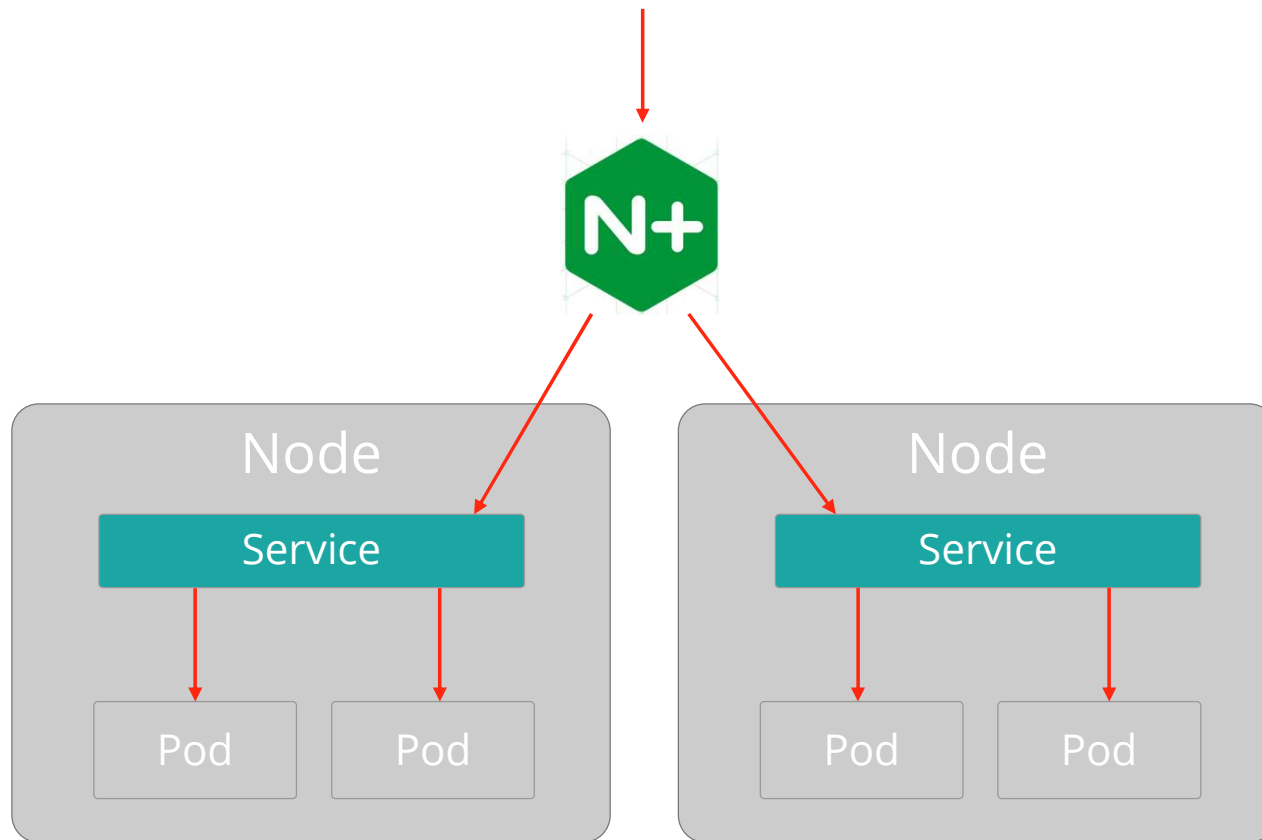
## Service

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



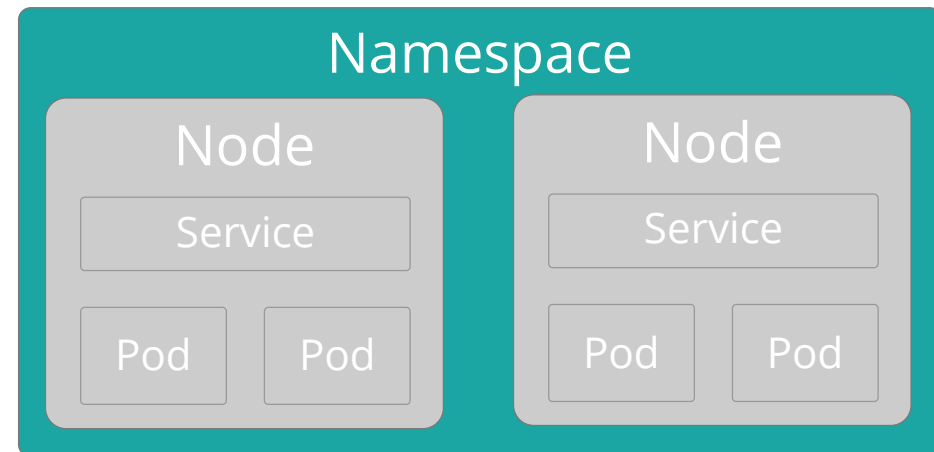
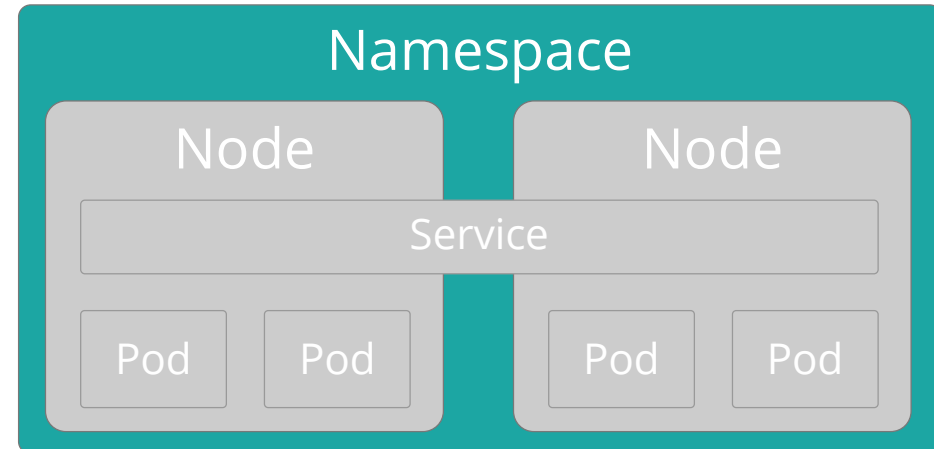
## Ingress

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



## Namespace

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



- 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



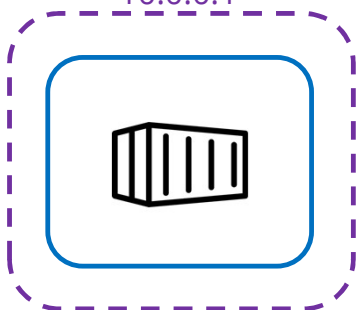
Deployment



Control Plane (1..n)

Node 1

10.0.0.1



Node 2

Node n



Docker



Kubelet



Docker



Kubelet



Docker



Kubelet

# K8s Concepts

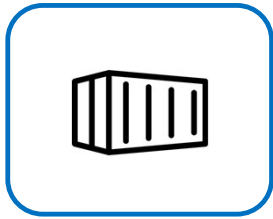
Deployment



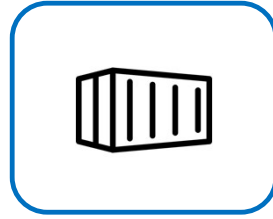
Control Plane (1..n)

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# K8s Concepts

Deployment

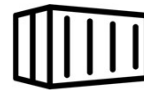
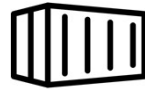
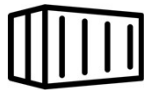
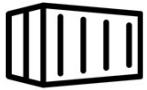
 Control Plane (1..n)

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Docker



Kubelet



Docker



Kubelet



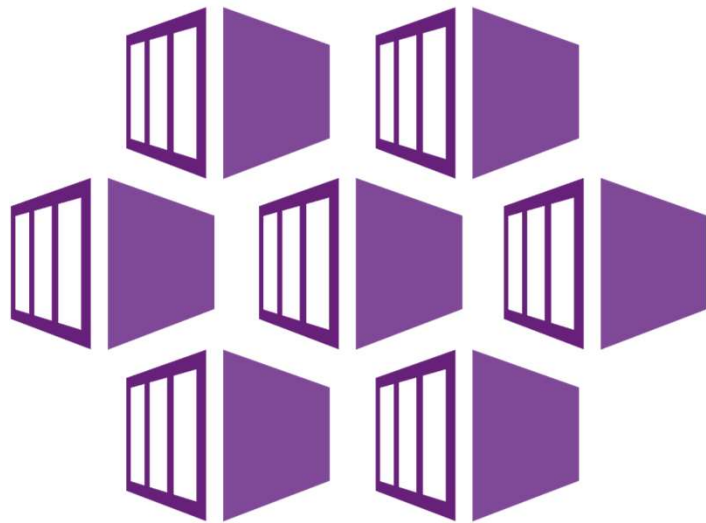
Docker



Kubelet



# What is Azure Kubernetes Service (AKS)?



## Microsoft's Managed K8s Service

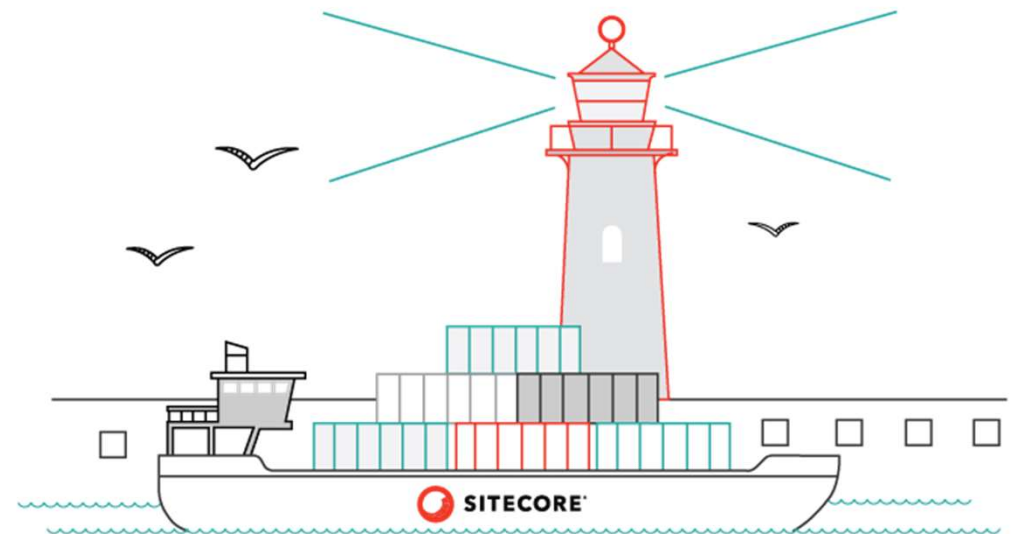
- Elastic Provisioning
- Integrated with VSCode
- Identity Management through AAD
- Available in 36+ regions
- Available with both Linux & Windows nodes

## 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 in a separate Node Pool







Demo Time!



- 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

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