Manage Kubernetes Infrastructure

UNDERSTANDING AZURE KUBERNETES SERVICE INFRASTRUCTURE

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Course Overview

Understanding AKS Infrastructure

Understanding AKS Configuration Options

Deploying AKS

Developing AKS Deployment Templates

Deploying a Solution to AKS

Module Overview

The concept of Azure Kubernetes Services

Foundational AKS infrastructure

Azure Kubernetes Service: The Concept

A Short History of Kubernetes

Open source container orchestration

v1.0 released by Google in 2015

Now developed & maintained by CNCF

Designed to deploy and maintain apps at scale

Supports container technologies (e.g. Docker)

App code couples loosely with underlying platform

https://en.wikipedia.org/wiki/Kubernetes

Kubernetes on Azure: The Story so Far

Azure Container Services: Kubernetes, DC/OS, Swarm

ACS-Engine: Open source, IaaS-based, unmanaged

OSS container orchestration now 100% Kubernetes

Azure Kubernetes Service and AKS Engine

What is Azure Kubernetes Service?

Managed Kubernetes cluster running on Microsoft Azure

Kubernetes master service provided as a PaaS offering

Customer only pays for Kubernetes nodes: master is free

https://docs.microsoft.com/en-us/azure/aks/

What is AKS Engine?

Assets to provision unmanaged Kubernetes clusters on Azure

Upstream development which feeds in to managed Kubernetes
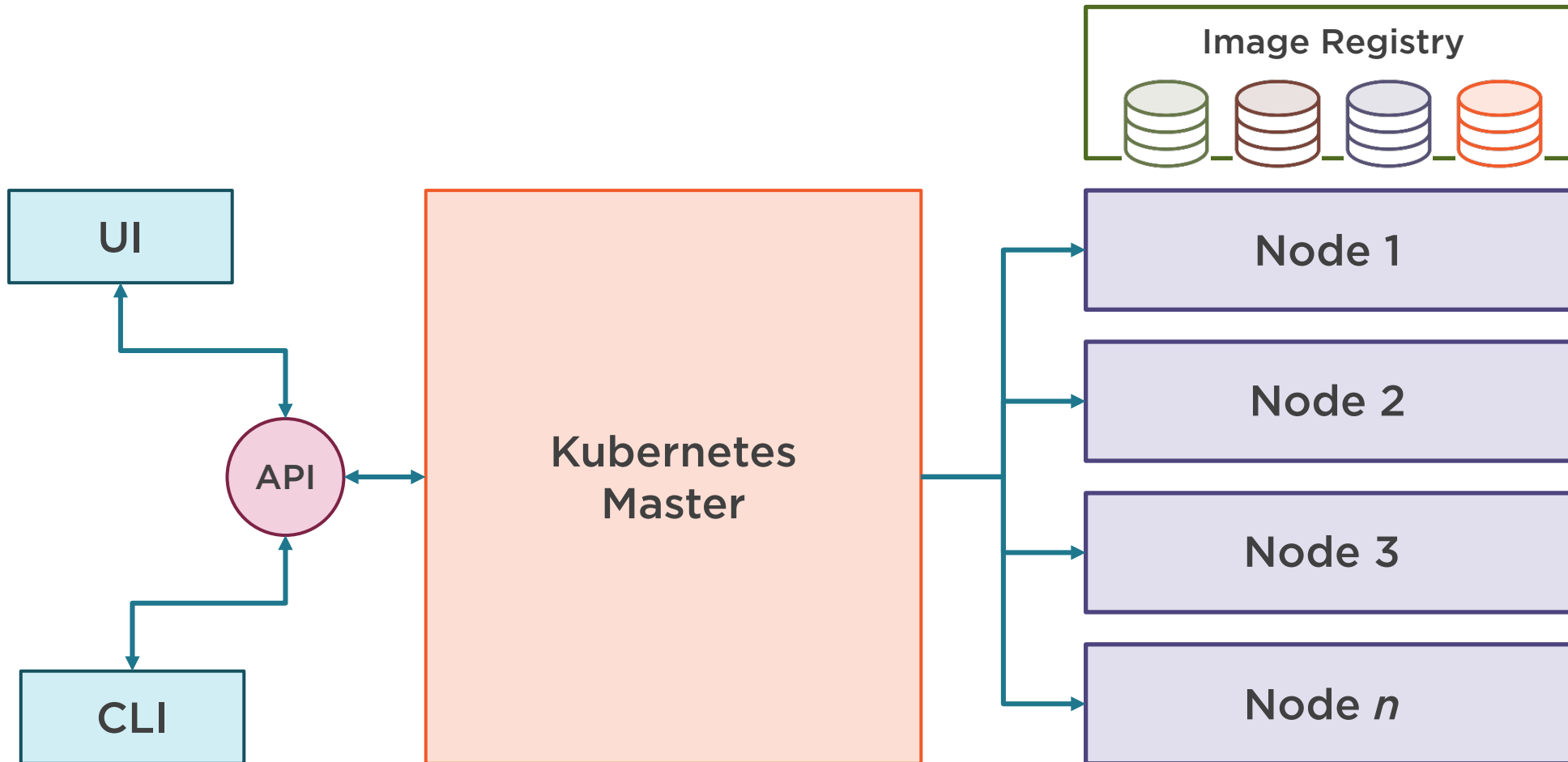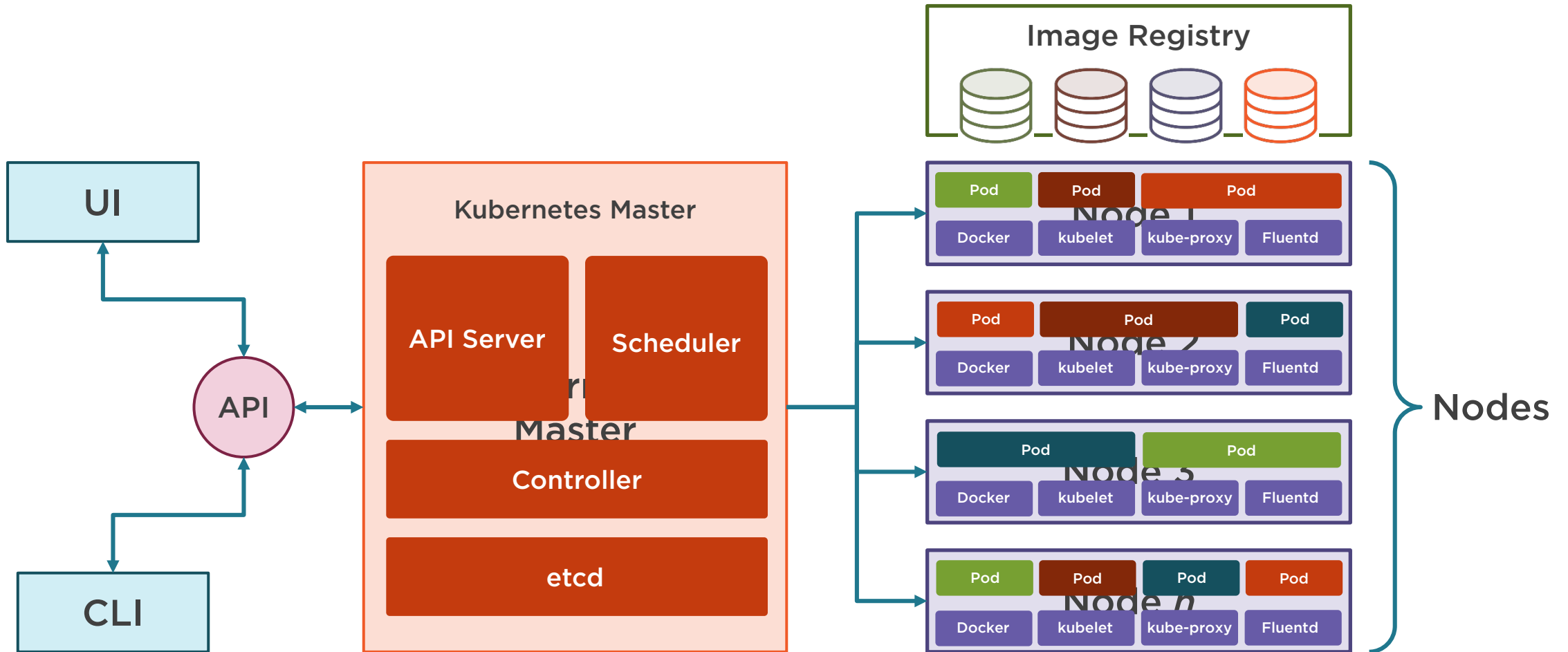
Support is best-effort, driven through GitHub Issues

https://github.com/Azure/aks-engine

Foundational AKS Infrastructure

High-Level Kubernetes Infrastructure

High-Level Kubernetes Infrastructure

UI

CLI

API

Kubernetes Master

API Server

Scheduler

Master

Controller

etcd

Image Registry

Node 1

Pod	Pod	Pod
Docker	kubelet	kube-proxy	Fluentd

Node 2

Pod	Pod	Pod
Docker	kubelet	kube-proxy	Fluentd

Node 3

Pod	Pod
Docker	kubelet	kube-proxy	Fluentd

Node *n*

Pod	Pod	Pod	Pod
Docker	kubelet	kube-proxy	Fluentd

Nodes

Azure Kubernetes Service Infrastructure

1. Azure Kubernetes Service
2. Virtual Network
3. Kubernetes Cluster
4. Azure Virtual Machine
5. Azure Container Registry
6. Docker Hub
7. Azure Active Directory
8. Azure Key Vault
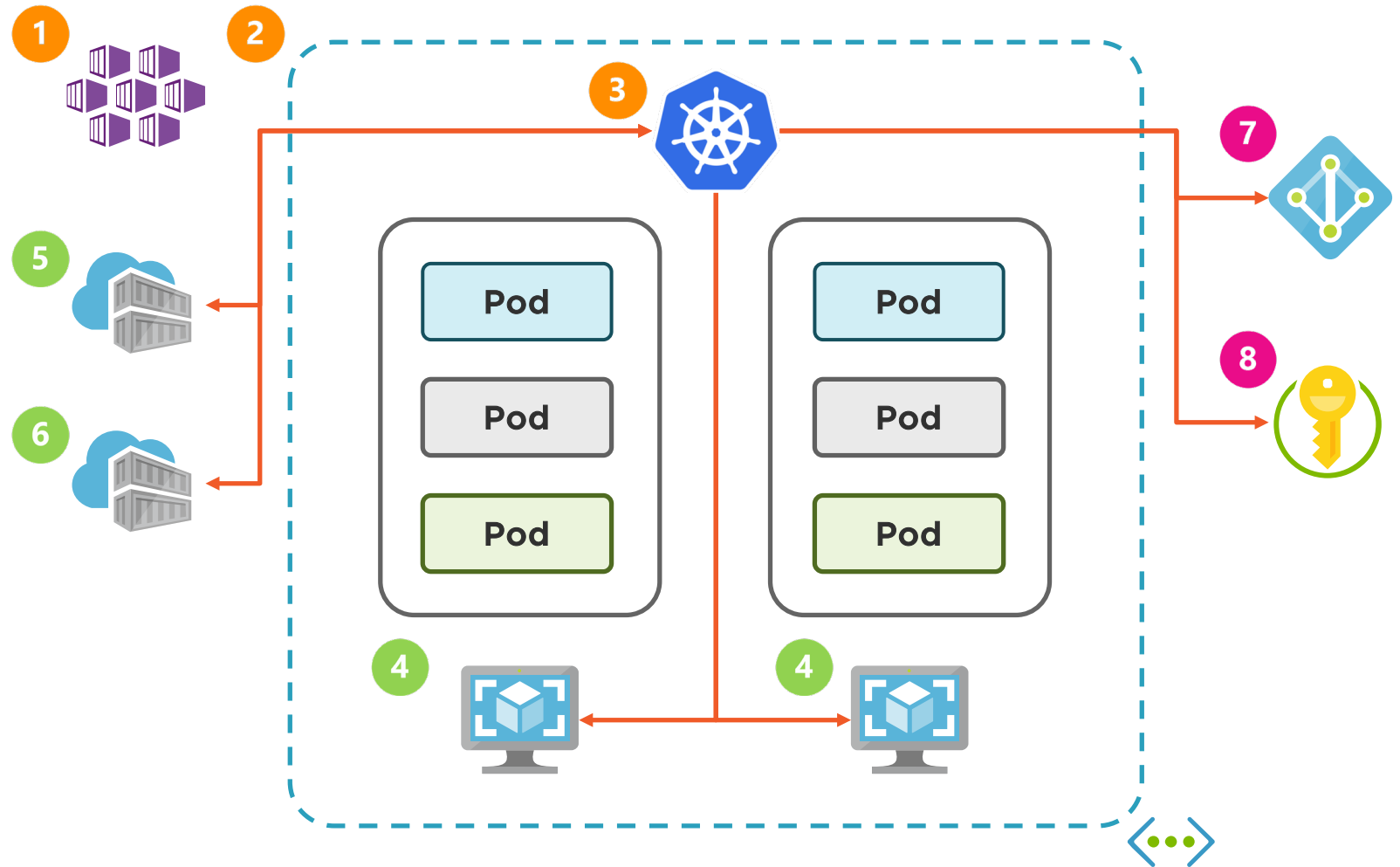
More Resources

Getting Started with Kubernetes

https://app.pluralsight.com/library/courses/getting-started-kubernetes

Foundations for Cloud Architecture

https://app.pluralsight.com/library/courses/cloud-architecture-foundations

Azure Kubernetes Service: The Big Picture

https://app.pluralsight.com/library/courses/azure-container-service-big-picture

Docker and Kubernetes: The Big Picture

https://app.pluralsight.com/library/courses/docker-kubernetes-big-picture

Module Overview

The concept of Azure Kubernetes Services

Foundational AKS infrastructure

Coming next:
Understanding Azure Kubernetes Service Configuration Options