SHADOWSOFT

1: Architecture Framework

WHY THIS FRAMEWORK IS IMPORTANT

Kubernetes requires coordination between Operations and Development to explicitly define and explain new conditions for application development and deployment.

This framework focuses on your current environment to identify ways to optimize your Kubernetes environment. Simple changes can significantly improve performance.

EXERCISE

1.5 Hours

Medium Difficulty

Enterprise Architect
Head of Operations

What Kubernetes distribution(s) are being used or evaluated?

Distribution	Distribution Version	Kubernetes API Version
☐ Red Hat OpenShift		
☐ Rancher Kubernetes Engine		
☐ AWS Elastic Kubernetes Services (EKS)		
☐ Azure Kubernetes Services (AKS)		
☐ Google Kubernetes Engine (GKE)		
☐ VMware Tanzu		
☐ Other:		

What is the current infrastructure Kubernetes is deployed on?

☐ Bare metal

☐ VMware (Version):_____

☐ Amazon Web Services

☐ Microsoft Azure

☐ Google Cloud

☐ Other: _____

What is the current or intended cluster count and distribution?

Cluster Type	Quantity	Working Group Access
Development		
Test		
QA		
UAT		
Production		

What is the standard cluster node configuration?

Node Type	Quantity
Control Plane	
Shared Service	
Worker	

If clusters are deployed in a single datacenter, are they deployed on different racks with separate power?

- ☐ Yes
- ☐ No

If clusters are deployed in a public cloud, are you leveraging multiple availability zones?

- ☐ Yes
- ☐ No

What tool(s) are you using to manage multiple Kubernetes clusters for federating and governing configuration and access?

- ☐ Red Hat Advanced Cluster Manager
- ☐ Rancher Management Server
- ☐ None
- ☐ Other: _____

What are you using for Kubernetes nodes:

- ☐ DHCP
- ☐ Static IP

How are cluster and node provisioning being performed?

- ☐ Manual provisioning
- ☐ Automated provisioning - Which tools?_____
- ☐ Node autoscaling - Which tools?_____

What are the number of workloads running in each cluster:

Cluster 1	_____	Cluster 2	_____
Cluster 3	_____	Cluster 4	_____
Cluster 5	_____	Cluster 6	_____

Estimate of growth expectations (%): _____

Types of applications:

- ☐ Web applications
- ☐ Message brokers
- ☐ Services
- ☐ Databases
- ☐ Caching systems
- ☐ Other: _____

Types of web applications and services (check all that apply):

- ☐ Monolithic
- ☐ Tiered
- ☐ Microservice

How are you segmenting workloads inside clusters?

_____

What is your current ingress solution?

- ☐ NGINX
- ☐ HA Proxy
- ☐ Envoy
- ☐ Istio
- ☐ Traefik
- ☐ Other: _____

How is application provisioning handled:

- ☐ Manually
- ☐ Automated through delivery processes tied to service accounts
- ☐ Both

What continuous integration (CI) tools do you use?

- ☐ Jenkins
- ☐ Bamboo
- ☐ GitLab CI
- ☐ Circle CI
- ☐ TravisCI
- ☐ Other: _____

Do you use different CI tools outside of Kubernetes?

- ☐ Yes
- ☐ No

What continuous deployment (CD) tools do you use?

- ☐ Jenkins
- ☐ Bamboo
- ☐ GitLab
- ☐ Circle CI
- ☐ AWS CodeDeploy
- ☐ Other: _____

Do CD tools differ outside of kubernetes?

- ☐ Yes
- ☐ No

Are you using a service mesh system?

- ☐ Yes
- ☐ No

What service mesh system?

Istio	Linkerd
Consul	Traefik
Nginx	Other: _____

Are the workloads stateful or stateless?

- ☐ Yes
- ☐ No
- ☐ Both

What storage solution is being leveraged?

Portworx	Rook
Longhorn	Ceph
VMware	Other: _____

Is there an SLA tied to the services hosted in Kubernetes?

- ☐ Yes
- ☐ No

Is there a documented disaster recovery plan?

- ☐ Yes
- ☐ No

Security compliance requirements?

SOC 2	PCI-DSS
HIPAA	GDPR
SOX	Other: _____

NEXT STEPS

Review the answers to your questions. Would you say that you are: Getting Started, Delivering Quick Wins, Building Mastery, or Scaling Success. Your answer will give you a sense of your Kubernetes infrastructure maturity today.

Now identify what you think you need to create a stable, reliable, and secure environment. Trust your gut on this task. You can always change your answer after you complete the remaining Health Assessment Maps.