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SNIA on Kubernetes: An Overview of Educational Opportunities

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What We Do

Educate vendors and users on cloud storage, data services and orchestration

Support & promote business models and architectures: OpenStack, Software Defined Storage, Kubernetes, Object Storage

Understand Hyperscaler requirements
Incorporate them into standards and programs

Collaborate with other industry associations

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What CSTI Members Do

Speak at highly-rated industry **webcasts**

Over **8,000+ views** of cloud storage webcasts

Author and publish **white papers** and **articles**

Blog on hot cloud storage topics

Represent CSTI at industry **conferences worldwide**

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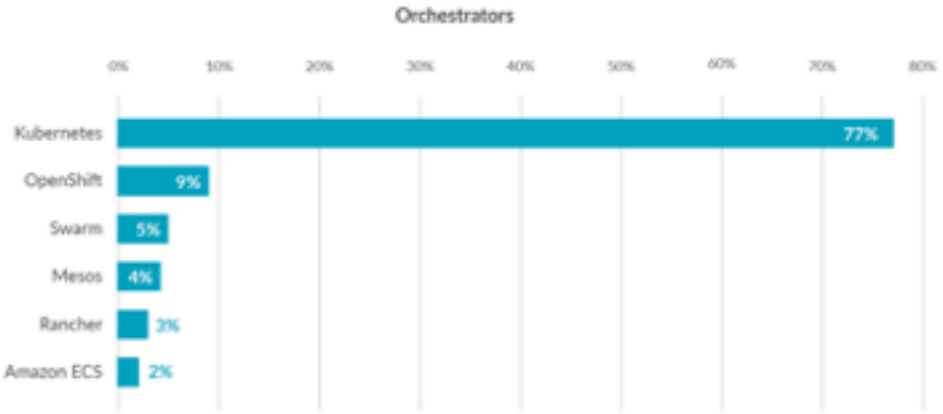
Kubernetes

In Four Parts

What’s So Important About Kubernetes?

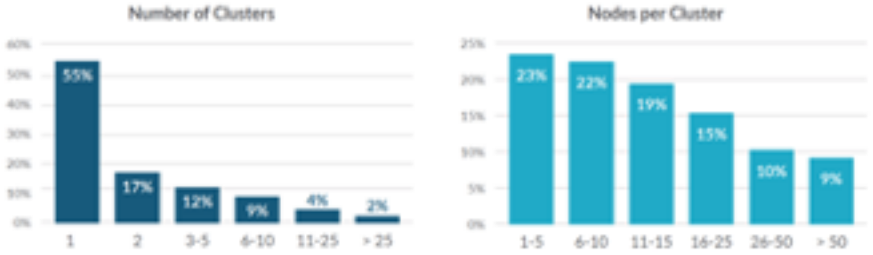
Kubernetes is one of the most significant players in the container momentum, and is driving significant improvement in IT infrastructure for those that use it.

Container Orchestrators In Use



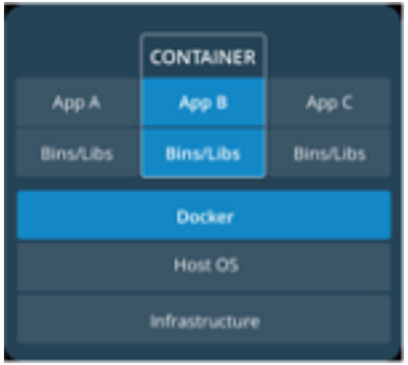
Source: Sysdig 2019 Container Report

Kubernetes Usage Patterns

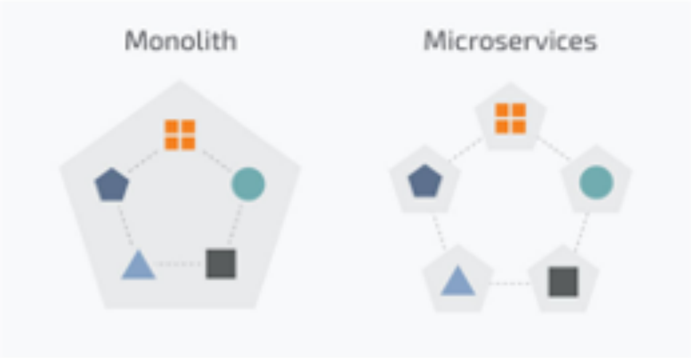


Source: Sysdig 2019 Container Report

Kubernetes In the Cloud (Part One): What, Why, How

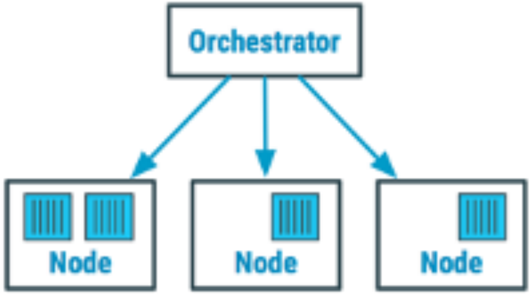


What is a container?



Why use containers?

Link: Kubernetes in the Cloud (Part 1)



How do you manage containers?

Kubernetes In the Cloud (Part Two): Storage

Solution for Stateful applications – Storage Enabler for Containers

1. When I run a Stateful (Persistent Storage) application in a container, I expect my data to be stored for future usage.

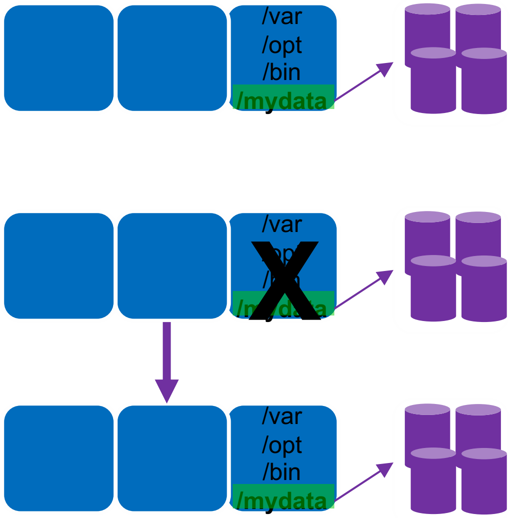
Note: Persistent Volume is created on attached storage.

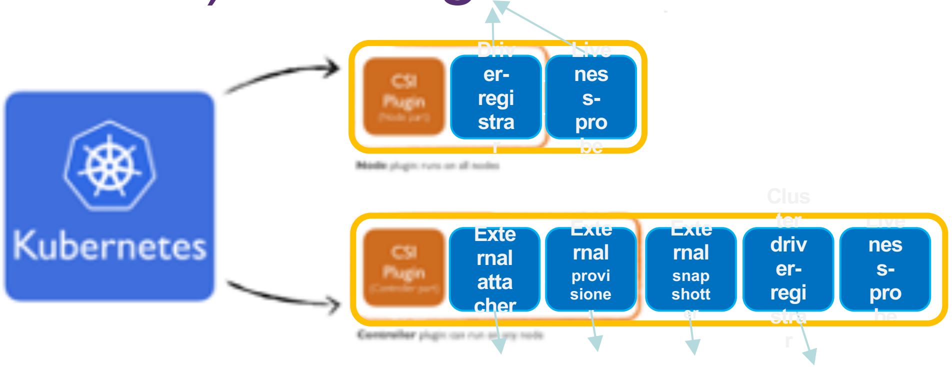
2. If container should reconstitute, data remains intact on the attached volume.

Note: Volume can be attached to a new container on different host

Link: [Kubernetes in the Cloud (Part 2)]

Stateful Environment





Kubernetes In the Cloud (Part Three): Stateful Workloads

- Why ***stateful*** work is challenging
  - The lifecycle is more complicated
  - Container's learning curve + tools
  - Security is paramount

Link: Kubernetes in the Cloud (Part 3) Stateful Workloads

- Five ways to run ***Stateful*** workloads on Kubernetes

1. on VM (easier)
2. on k8s via StatefulSet (harder)
3. on k8s via Operator (harder)
4. via Cloud Managed Service (easier)
5. via Service Broker (harder)

Kubernetes In the Cloud (Part Four): Managing Scale

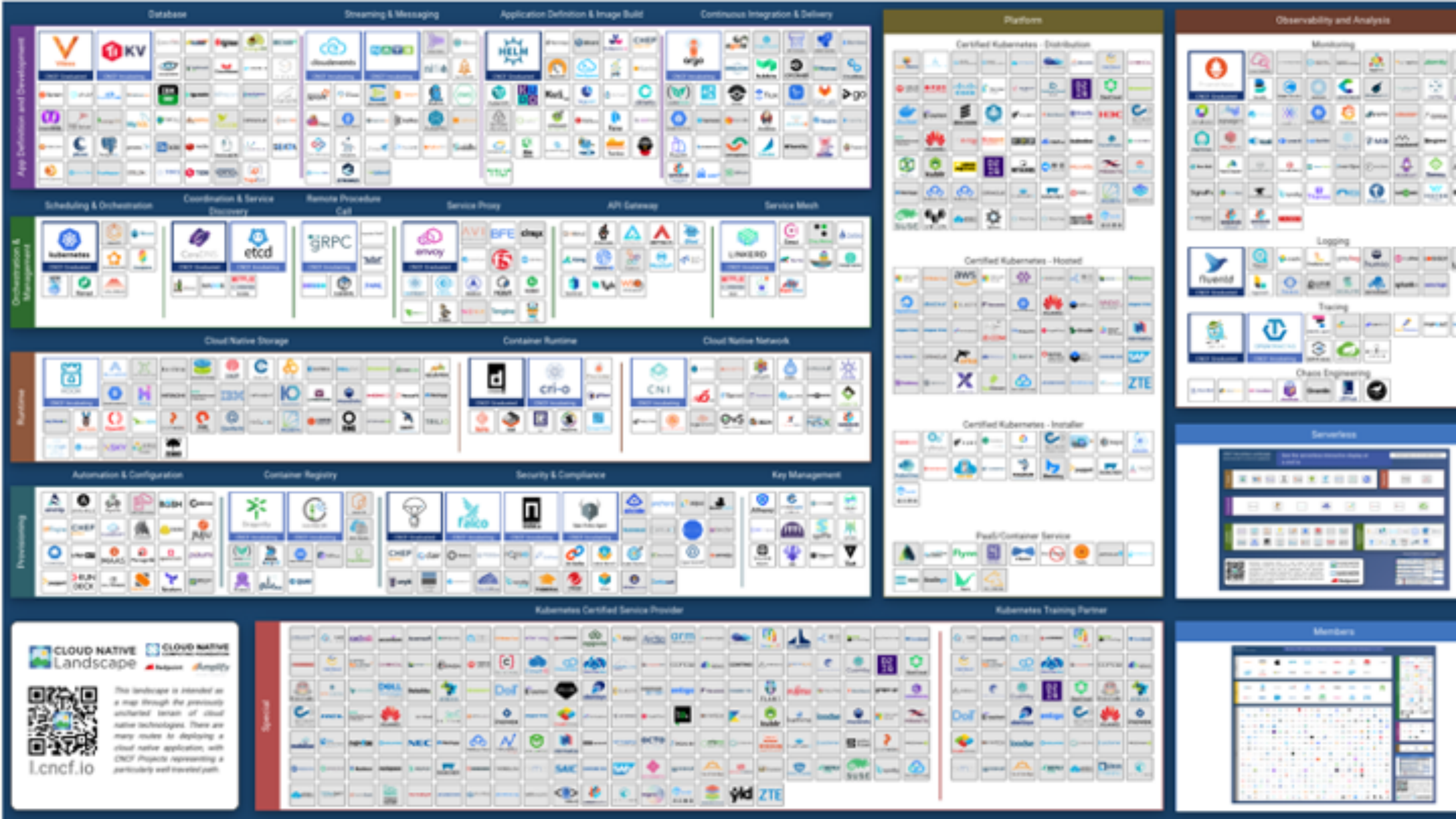
We’ve been doing it all wrong

Security, multi-tenancy, and most of Kubernetes is approached incorrectly by the vast majority of us

What should we do?

Follow early solutions, recognize we don’t need multi-cluster multi-tenant architectures (yet), and **frame the problem in terms of queryability**.

Link: [The Coming Kubernetes Datapocalypse]


App Definition and Development
Database
Streaming & Messaging
Application Definition & Image Build
Continuous Integration & Delivery
Orchestration & Management
Scheduling & Orchestration
Coordination & Service Discovery
Remote Procedure Call
Service Proxy
API Gateway
Service Mesh
Runtime
Cloud Native Storage
Container Runtime
Cloud Native Network
Provisioning
Automation & Configuration
Container Registry
Security & Compliance
Key Management
Platform
Certified Kubernetes - Distribution
Certified Kubernetes - Hosted
Certified Kubernetes - Installer
PaaS/Container Service
Observability and Analysis
Monitoring
Logging
Tracing
Chaos Engineering
Serverless
Members
Kubernetes Certified Service Provider
Kubernetes Training Partner
Special
CLOUD NATIVE Landscape
CLOUD NATIVE
l.cncf.io

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well traveled path.

Great! What can I do to learn more or to participate?

Join SNIA CSTI

Participate in regular collaboration

Share my stories

Thank you!

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