Data orchestration for Kubernetes
Stateful tier-1 primary workloads

FLASH MEMORY SUMMIT
Marc Fleischmann  |  August 8, 2019
Why containers and K8s?

Make applications portable and scalable

Standardize distribution model (DevOps)

Automatically manage applications and resources
Enterprise K8s ⇒ Long-running apps ⇒ Stateful K8s

Longer app life means dynamic requirements on underlying resources

Infrastructure flux challenges resource uniformity across app lifecycle

This is increasingly recognized as a big problem
K8s automates resource management

One size fits none!
Resources are not equal, and won’t evolve equally

So K8s needs to be aware of underlying infrastructure
⇒ Dependencies + lock-in
⇒ Need a resource provider that can keep promises (“SLOs”) across lifecycle
Datera – Tier-1 Primary Storage Provider

Composability + Simplicity
- App-driven live composability
- Full app+data lifecycle automation
- Continuous tech adoption – Driven by policy + telemetry

Enterprise Performance
- Predictable tier-1 primary performance
- Continuous availability, 24x7 lights-out
- Full enterprise storage features
Datera is built from ground up to let apps drive their data requirements

Policy/template driven
Consistent contracts for dynamically scaling apps (pods)

Constantly brokering change
app consumers vs. resource providers

Extremely resilient, auto-scaling, self-balancing, zero-touch
Datera lets K8s keep its promises

Live data mobility

⇒ Lifecycle management + Infrastructure flux immunization

K8s namespaces drive Datera multi-tenancy

⇒ App isolation and QoS

Deliver data infrastructure aaS
Enterprise Performance

Resource Consumers
- Distribution
- Developers
- CaaS | VMaaS | BMaaS

Resource Providers
- IT Operations
- IaaS

Container Container Container Container Container
VMs VMs VMs
K8s Hypervisor

38µs Distributed Software Overhead
Full data services stack

<200µs iSCSI
<70µs NVMe/TCP

PMEM Servers
NVMe/SATA/Cold Flash Servers
Disk Servers
Cloud Endpoints
Composability / Flexibility

Resource Consumers
Distribution Developers
CaaS | VMaaS | BMaaS

Resource Providers
IT Operations
IaaS

Container Container Container Container Container
VMs VMs VMs
K8s
Hypervisor

Auto-Scaling Policy
Live Data Mobility + Multi-Tenancy

Self-service – Profiles (↓) and Promises (↑)

PMEM Servers
NVMe/SATA/Cold Flash Servers
Disk Servers
Cloud Endpoints

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Game-Changing Operational Simplicity

**Traditional Model**

- **Planning**: 3–5 year system planning
- **Procurement**: Point-in-time technology risk
- **Operations**: High-touch manual config
- **Scaling**: Rigid silos with trapped data
- **Service**: Emergency incident responses
- **Obsolescence**: 3–5 year tech forklift treadmill

**DATERA + kubernetes**

- Just-in-time service definition
- Continuous technology adoption
- Application-driven composability
- Data infrastructure continuum
- Continuous availability
- “Eternal” clusters on rolling hardware

**Customer manages**

**DATERA automates**
Datera fulfills the promise of stateful K8s

By enabling developers to build rich solutions

Without worrying about the underlying infrastructure!
Thank you!

For more information, visit www.datera.io