Red Hat Summit

Connect

From Concept to Scale: Design & Implementation Insights from adopting OpenShift Virtualization

Eugenio Grosso,
Principal Field Solutions Architect, Pure Storage

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Portworx and Red Hat Accelerate Modern Application Adoption Across Enterprises

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Cost Avoidance:
Lower TCO for enterprises vs. traditional application stack

Operational Efficiency:
Streamlined app & data management workflows for VMs & Containers

App & Data Flexibility:
Run VMs & Containers on-prem, on public cloud, or hybrid deployment

"[Portworx and Red Hat OpenShift] hit all the marks—low cost of ownership, works on-prem, in the cloud, or at the edge. It's an integrated ecosystem, and from a storage point of view, it just fits."

– Nate Mason,
Director of Platform Ops, SiriusXM

Portworx: Your Storage & Data Strategy for Kubernetes

Automate, Protect and Unify Modern Applications and Data Anywhere

Modern Apps or DBs

portworx® by Pure Storage

Automate
Self-service storage & DBs
Automated capacity management
Kubernetes-native data management

Protect
Enterprise business continuity
Container-granular backups
Ransomware protection

Unify
Cloud operating model for data
Manage VMs and containers

Red Hat OpenShift

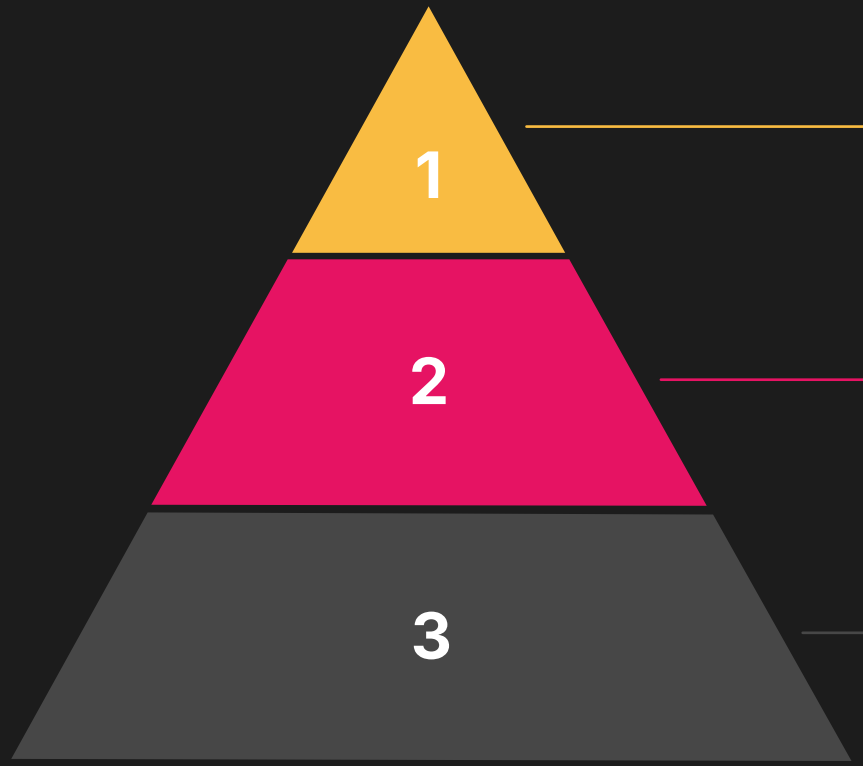
Virtualization
Unified application platform
Standardized set of tools and processes
Modernize at any pace

Infrastructure
Scalable foundation
Standardize on custom HW
Minimize application downtime

Modernization
Migration toolkit for virtualization
Enhanced workload portability
Simplified legacy app environment

Infrastructure — Enterprise SAN | Hyperconverged | Public Cloud

Portworx & RH are delivering a joint vision for a single modern, application platform for all workloads



Modern AI & MLOps Platform
Highly performant, scalable platform for modern, data intensive applications

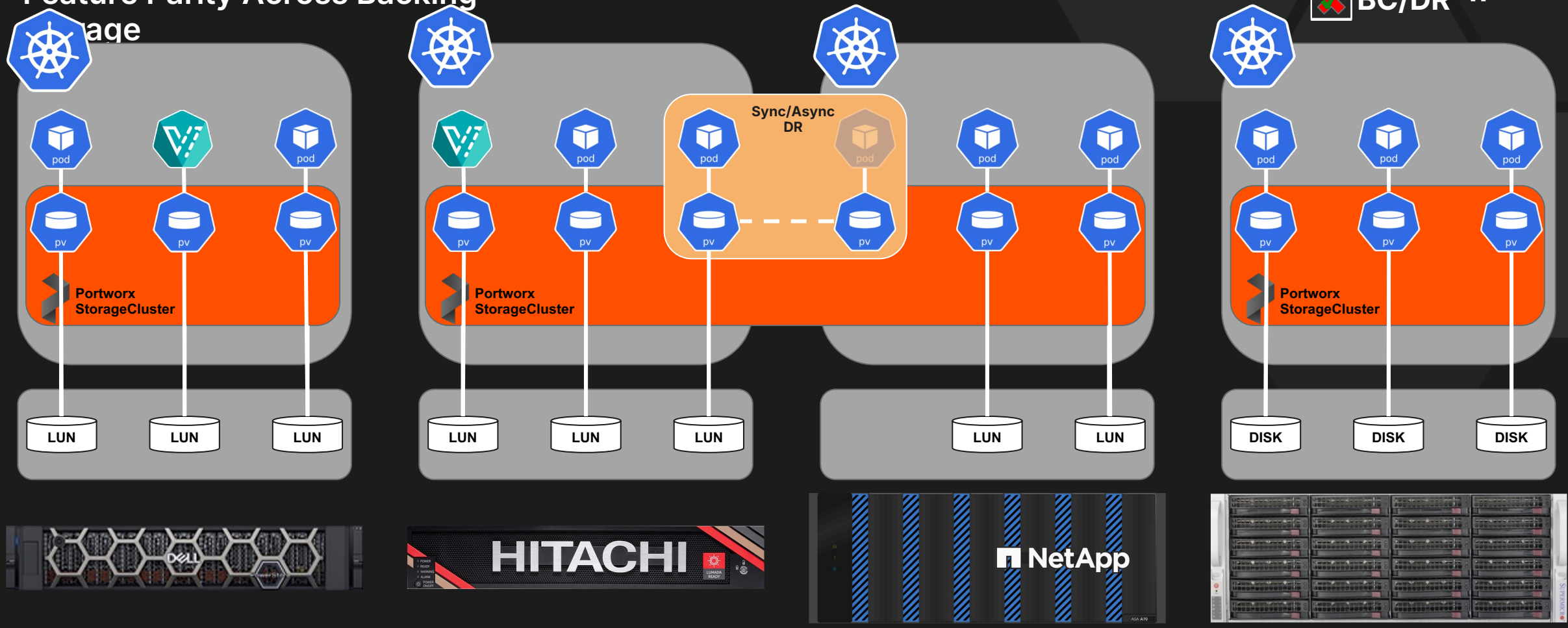
Modern Application Platform
Streamlined storage and data management for VMs and Containers

Modern Virtualization Platform
Cost-effective, modern approach to managing VMs on Kubernetes

Portworx Abstracts Storage

Feature Parity Across Backing
aqe

- Encryption
- Snaps/Migration
- BC/DR



Site 1 | Site 2 | Site 3 | Site 4

Portworx provides the enterprise-grade services customers require for their VM environment

Performance

Highly performant, scalable storage for VMs with built-in high availability

Disaster Recovery

Flexible disaster recovery policies based on application criticality

Backup & Migration

Live migration and Kubernetes Aware backups for easy migration and recovery

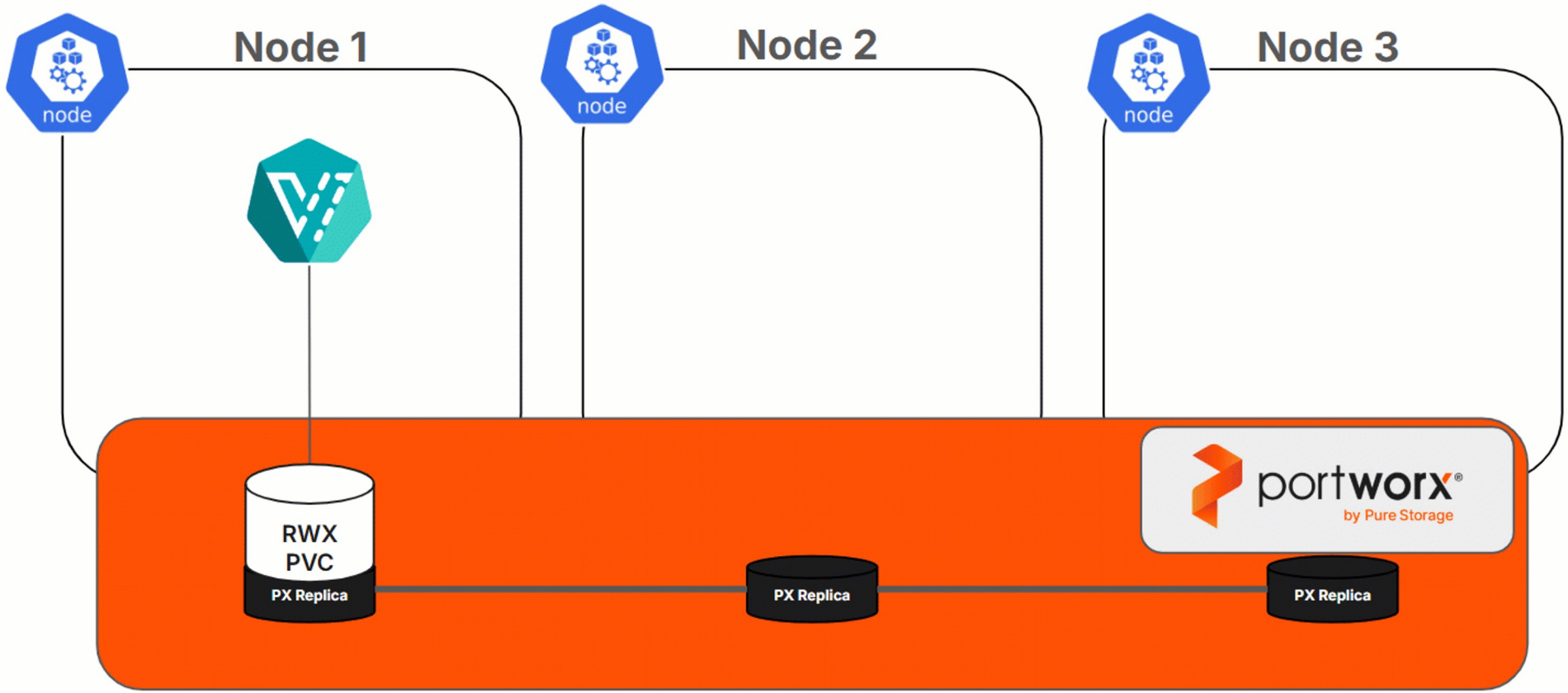
Ecosystem

Deep ecosystem of partners, supporting KubeVirt across any on-prem or public cloud storage

Portworx delivers key enterprise storage and data capabilities to run VMs on Kubernetes

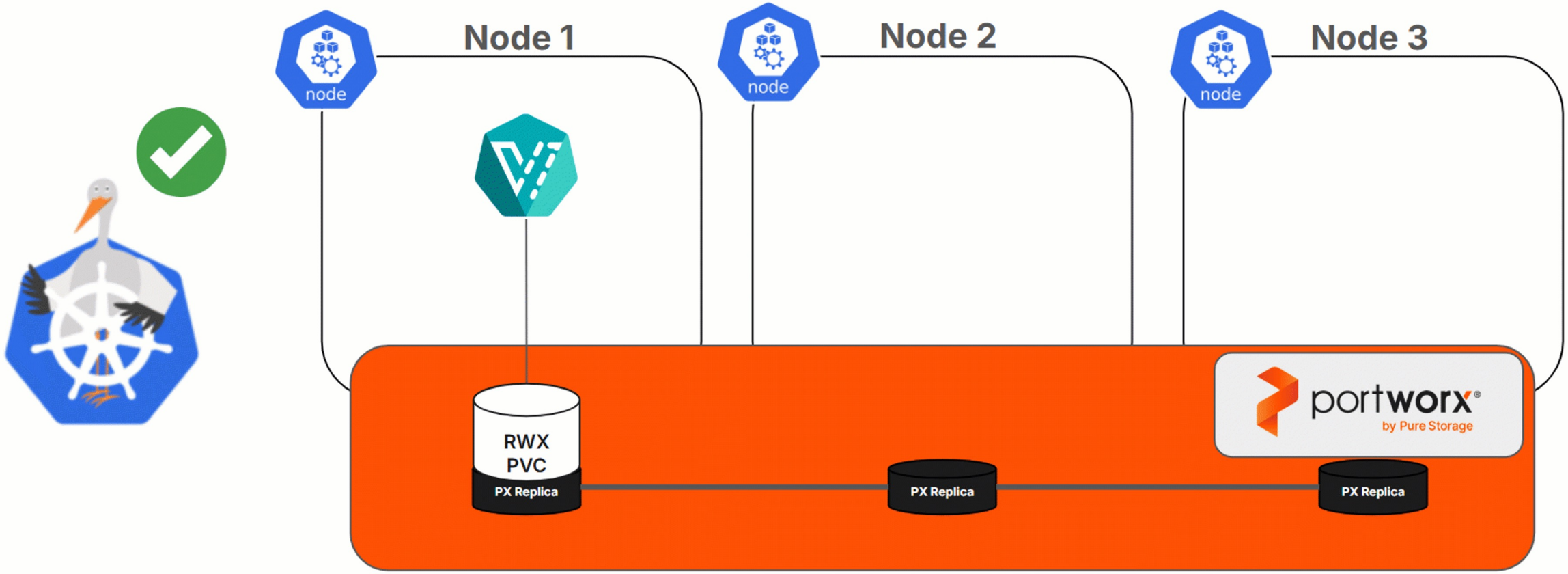
Benefit/Feature	*VMware Capability*	*KubeVirt Virtualization Capability*	*KubeVirt + Portworx Enterprise Capability*
Application Availability	vSphere HA	Deployments / Services	Deployments / Services
Application Deployment	VMware Templates	Pod Deployments	Pod Deployments
Application Resource Utilization	Resource Pools / Limits	Kube Scheduler, Requests / Limits	Kube Scheduler, Requests / Limits
Storage Infrastructure	VASA/VAAI/SPBM/vVols	Storage Classes, CSI Provisioner	Storage Classes, CSI Provisioner
Application Portability	vMotion	Delete/Redeploy with Load Balanced Apps	Live Migration
Data Availability	Shared Storage or vSAN FTT	X	Portworx Storage Cluster (Replication factor 1,2,3)
Storage Quality of Service	VMware Storage I/O Control	X	Portworx Application I/O control
Regional Disaster Recovery	VMware Site Recovery Manager	X	Portworx AsyncDR
Zero RPO Disaster Recovery	VMware Metro Storage Cluster	X	Portworx SyncDR
Encryption	Volume Encryption	X	Portworx Encryption, Authorization
Data Protection	VM-aware Backups (Partner)	Partner Solutions	Kubernetes Aware Portworx Backup
Data Portability	Storage vMotion	X	Portworx Backup / Portworx Migrate
Capacity Management	Thin Provisioning	X	Thin Provisioning / AutoPilot
Kubernetes Aware Storage Array Support	Any	Partner / Bolt-on Solutions	Any Block or Cloud Storage

Live Migration - vMotion Equivalency



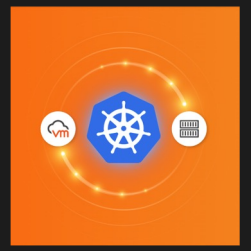
- Move running VMs between Kubernetes nodes
- ReadWriteMany (RWX) volume mode required
- Memory footprint and VM state transferred to new VM pod on destination node

Node Failure Restart - vSphere HA Restart Equivalency



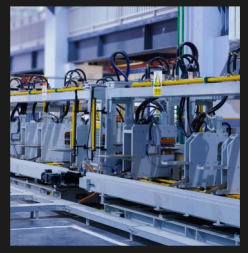
- Portworx' STORK (Storage Orchestrator Runtime for Kubernetes) decreases VM restart time
- STORK makes the Kubernetes scheduler "storage-aware" for faster rescheduling
- Restart/reattach in 60-120s instead of minutes with other solutions

Key Learnings from Customer Engagements



General

- There will be issues. Set expectations
- Have a complete project plan.
- “Everyone Fights, No one Quits!”
- Can we support an edge deployment?

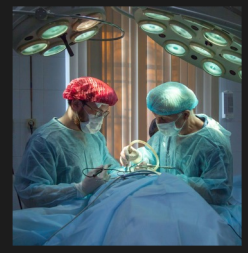


Manufacturing

- Leave room for revisiting previous sites
- Do we have our vendors connected?
- How easy is it to manage 50+ sites?

Media

- Build (2) environments; (1) for test & (1) for control.
- Are our current run-books / SOPs up-to-date?
- How do we handle plan deviations?



Healthcare

- Is CSI good enough?
- Do we need to change back-up vendors?
- How do we handle vendor provided VMs?

Driving App Modernization with a single platform for VMs and containers across 100s of manufacturing plants

US-based, multinational automotive manufacturing company

Challenge:

Moving away from VMware using Red Hat OpenShift and couldn't afford downtime across their 100+ manufacturing plants

Solution:

PX provided a single platform for container and VMs, supporting a hybrid architecture with operational simplicity and data protection at scale.

Benefits:

- Single platform for VMs and containers
- HA via FlashArray ActiveCluster
- Secure and recoverable data via PX-Backup

Lessons Learned & Key Takeaways

Top 10 Things You Can Do Today

- Don’t Wait!
- Pick Your Advisors
- Review Your Risk Exposure
- Build a Lab
- Document Your Environment
- Start Training
- Plan for Automation
- Identify your Quick Response Team
- Review Existing Policies & Procedures
- Set (Reasonable) Expectations

Attend our Monthly Hands on Lab

https://bit.ly/px_hols

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