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# Build Great Customer Experiences Today!

Eugenio Grosso, Principal Solution Architect  
Pure Storage

Milano, 19.11.2024



## 3 Takeaways from this session



Why the inevitable transition to Red Hat OpenShift for databases, VMs, & storage?

- Agility • Automation • Productivity



What are your considerations during the transformation?

- Ease • Security • Cost • Multi-cloud

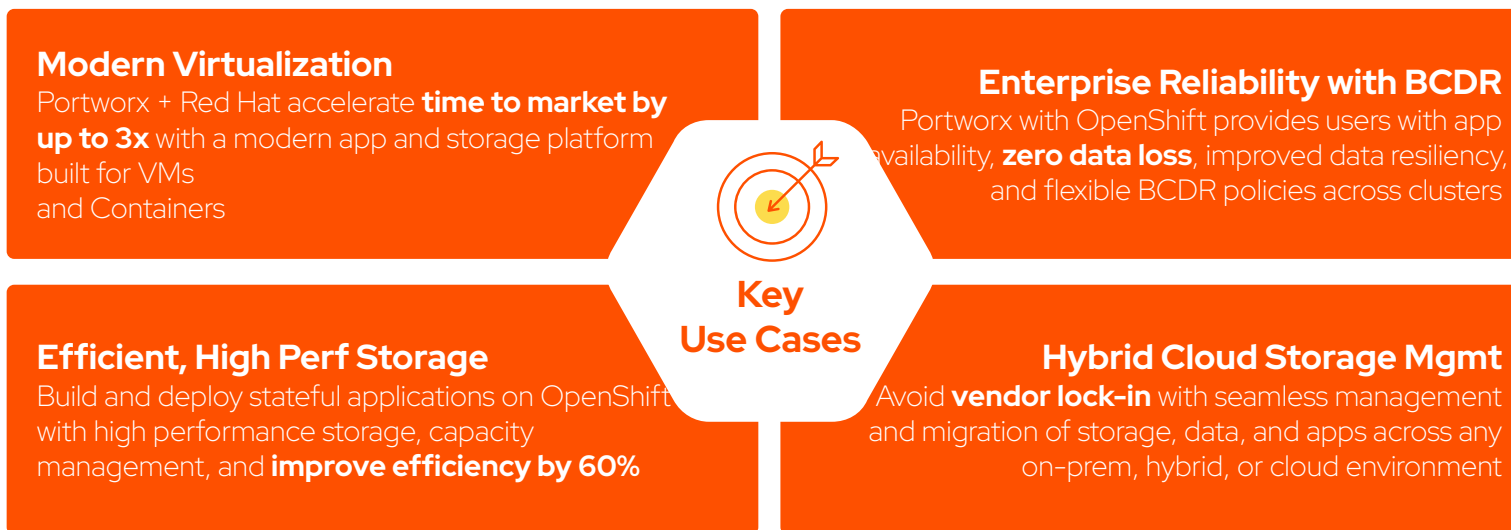


Why Portworx & Red Hat are the hybrid cloud platform for your transformation?

- Easy • Complete • Agnostic • Leader

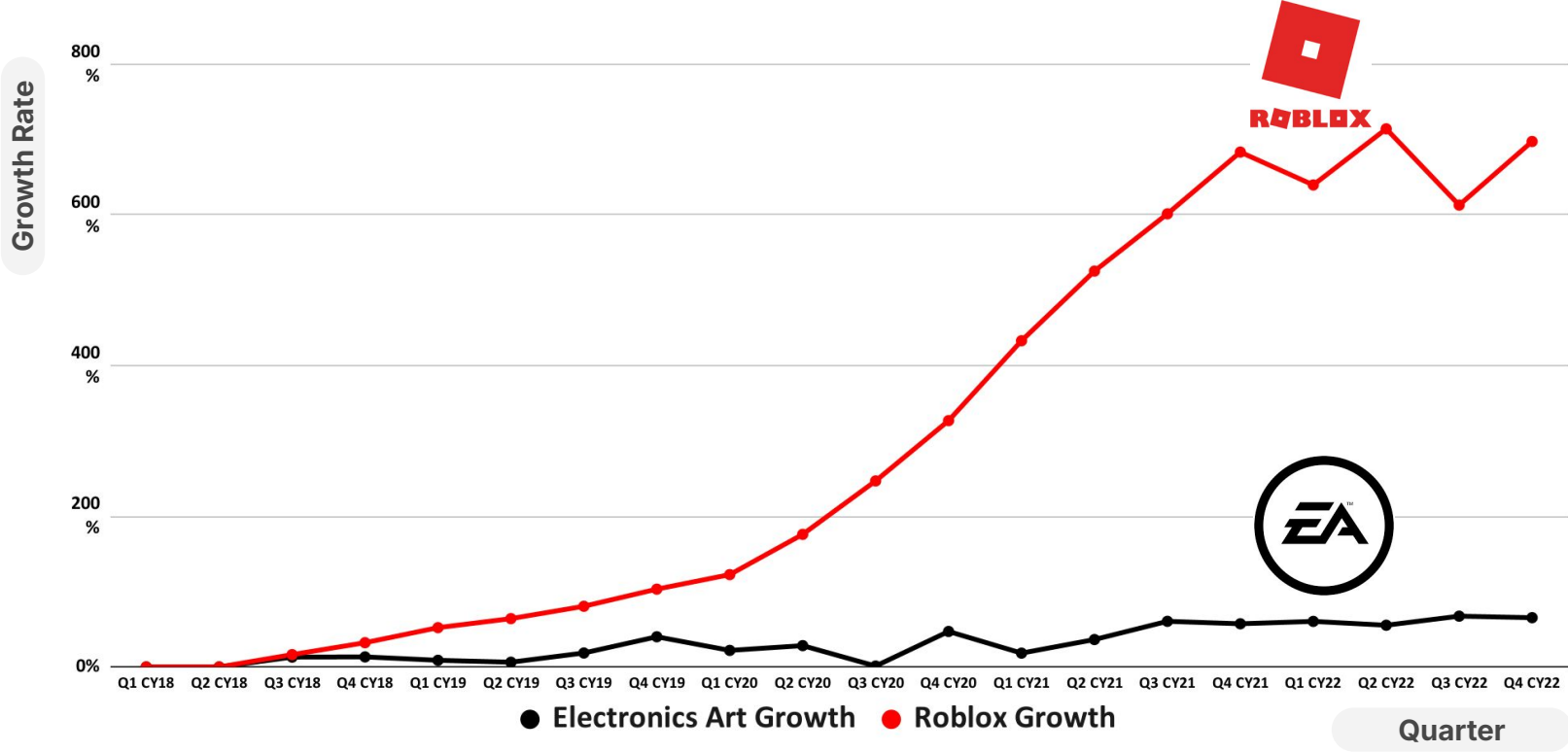
# Portworx + Red Hat

Together Portworx + Red Hat provide businesses with the enterprise-grade tools, services, and support what they require to run modern, mission-critical applications at scale



**The #1 K8s Data Platform + The Leading K8s Distro**

# Better customer experiences deliver greater revenue growth



# Developers are the Engines that Create Great Customer Experiences

**29M**

developer population globally  
by end  
of 2024



**600M**

enterprise apps supporting  
digital transformation by end  
of 2024







# Are Platform Teams Overwhelmed Supporting 100s of Developers?

# A single open platform for application innovation

A complete DevSecOps platform that integrates with existing infrastructure, tools, and services



## **Empowering developers to innovate**

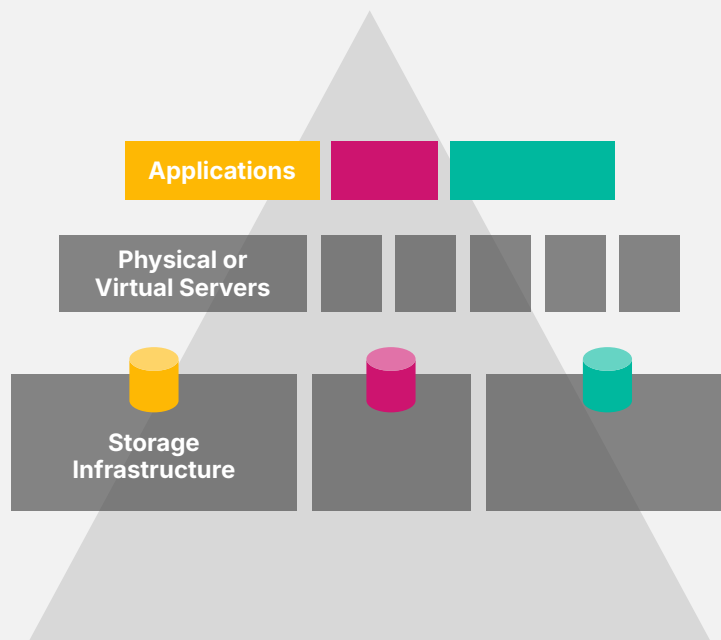
Get applications to production sooner with a wide range of technologies and streamlined workflows

## **A cloud-like experience, everywhere**

Full-stack and automated operations on a consistent foundation for on-premises or hybrid cloud infrastructures

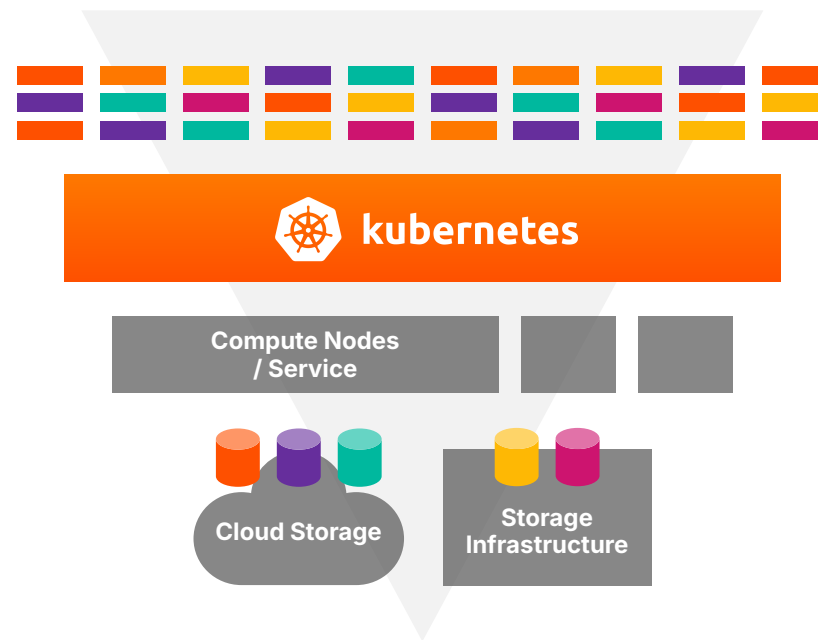
## **Trusted enterprise Kubernetes**

Continuous security, world-class support and services, and deep expertise to confidently run any application



## Virtual Machine World: Infrastructure-Centric

- Storage wired to servers
- Apps, infrastructure live forever
- Provision the server & storage
- Monitor the server & storage
- Backup the server & storage...



## Kubernetes World: App-Centric

- Kubernetes is all about automation
- Can use commodity infrastructure
- Apps and infrastructure come, go, and grow
- Provision the app, observe the app, scale the app, protect the app, migrate the app...infrastructure follows



**Portable**



**Elastic**

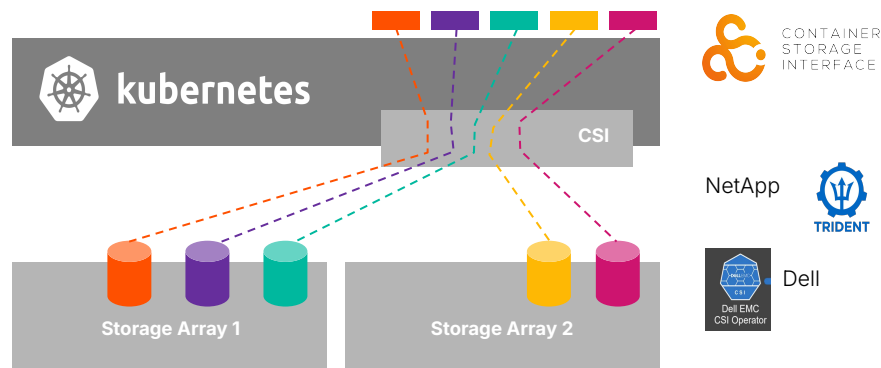


**Agile &  
Modular**



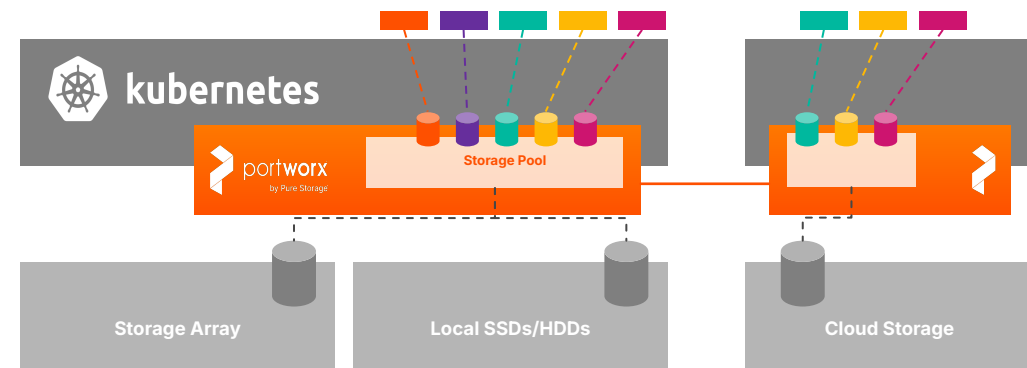
# Container-Native vs. Connector Approach

## "Connector" Approach



- 1:1 container <> volume mapping
- Container capabilities vary depending on the capabilities of the underlying array
- Storage arrays often are challenged by the object count (# volumes, connections) and change rate (10,000s changes/day)
- Innovation limited to the features in the open CSI specification
- Storage arrays managed independently from K8s

## Container-Native Storage Approach



- Many (1,000s):1 container <> volume mapping
- Designed to scale to 10,000s operations/day
- Ensures consistent storage services across ANY infrastructure
- Storage services container-granular and application consistent
- Storage "encapsulated" in a container-native virtual volume that is free to move with the container
- Managed as a native part of K8s

# Moving to production requires addressing these key storage, data management, & data protection requirements



SDS storage layer that automates container storage for developers and admins

**Reduce Operational Costs Accelerate Time to Market**



Easily move applications between clusters for hybrid & multi-cloud availability

**Easy Migration from On-Prem to Cloud**



Implement consistent encryption and security policies & multi-tenancy across clouds

**Lower Risk with Automated Protection**



High Availability Replication between AZs and regions & Clouds

**Eliminate Downtime with Zero RPO**



Auto-scale storage as your app grows to reduce costs

**Intelligently deploy cloud storage to reduce overall spend**



App-consistent backup for cloud native apps with all k8s artifacts and state

**Maintain Governance & Compliance**

# The Alternate Approach: Cloud-Native Apps built on Red Hat OpenShift and Portworx



## 100% Self Service

Databases, environments and tools for developers



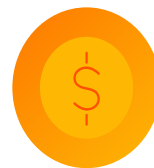
## Build Anywhere

In multiple clouds or on-prem with cloud-like experience



## Run at Scale

Scale any app, stateless or stateful, quickly and resiliently



## Operate Cost-effectively

Avoid costly cloud services and consume only needed resources

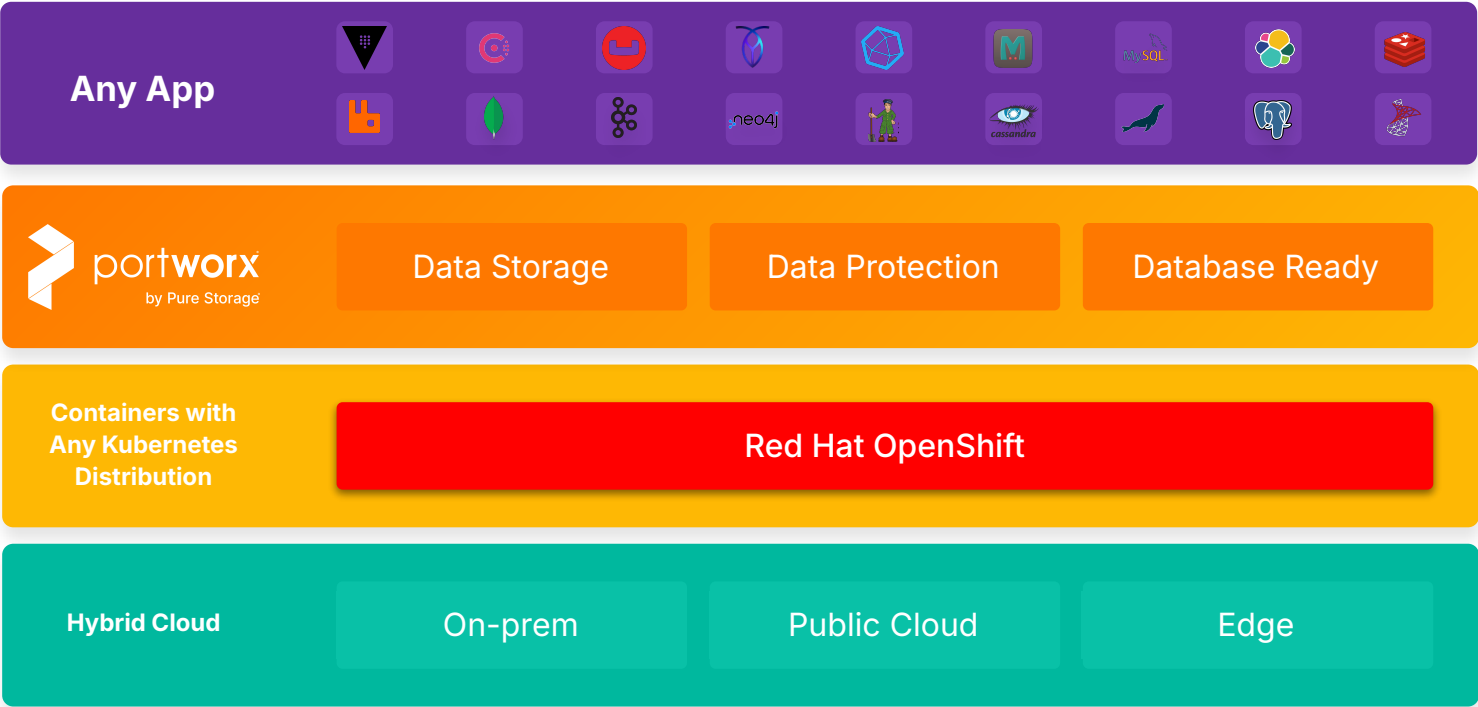


## Remain in Control

Retain full control of your data no matter where it runs

# Portworx + Red Hat OpenShift

The #1 K8s Data Platform & Leading K8s Distro



**Red Hat OpenShift is the industry's leading enterprise Kubernetes platform, providing a consistent foundation for developers to build, deploy, manage, and scale containerized applications. Portworx data management and data protection offerings help unlock key use cases for Red Hat OpenShift workloads in production.**

**– Chris Gray, VP Global Customer Success, Red Hat**





portworx<sup>®</sup>

by Pure Storage

## The #1 Kubernetes Data Platform

**300%**

Faster time to  
production for apps

**99.999%**

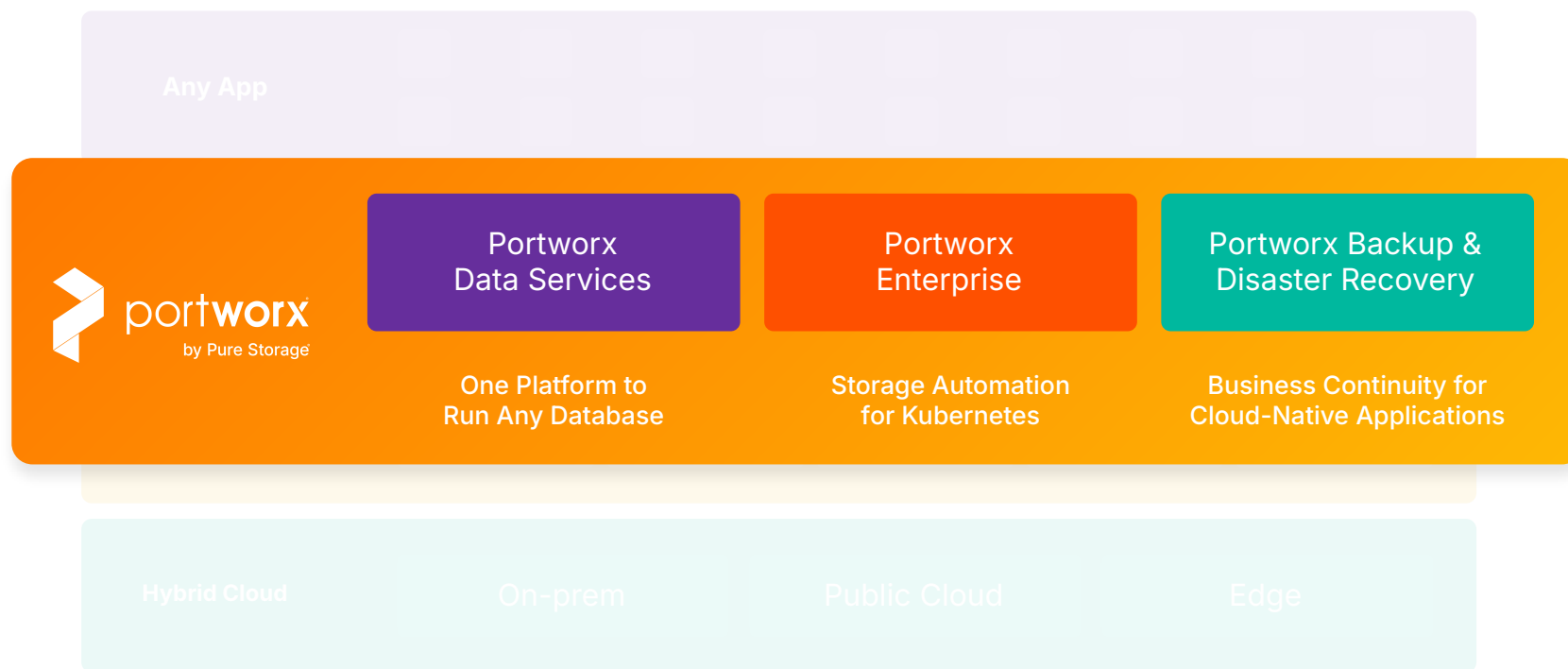
Application  
uptime

**75%**

Savings in cloud  
infrastructure



# Build Apps Anywhere and Run them at Production Scale with High Availability, Reliability, and Security



# Application Performance: Storage Automation for Kubernetes

Run Kubernetes in Production with On-Demand Access to ANY  
Storage, Unmatched Availability & Elastic Scalability

**Red Hat OpenShift**

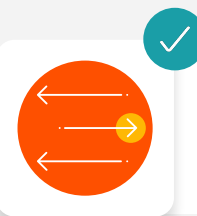


Kubernetes Data  
Management Platform

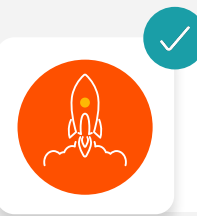
**Hybrid & Multi-cloud Ready**

On-prem | Hybrid Cloud | Public Cloud | Edge

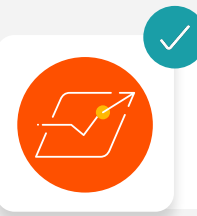
## Portworx Enterprise



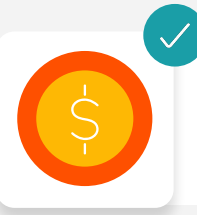
Developer-ready Storage



High Availability  
and Performance



Enterprise Business Continuity with DR



Thinly Provisioned  
K8s Storage

# What Do You Get With Portworx?



## Automated Capacity Management

- PX-Autopilot, Cloud Drives



## Cloud-native DBPaaS for Any DataBase

- Curated DB images, UI & API Parity



## Full suite of Enterprise class Disaster Recovery

- Sync DR, Near-Sync DR & Async DR



## App and Volume Migrations Across Any Cloud

- PX-Migrate, VPS, Stork, Cloud Drives



## Broadest Catalog of Data Services

- 1-click deployment, Single Pane of Glass



## Resource Optimization at Scale

- App I/O control

11

Data Services

Any

Cloud or Storage Infra

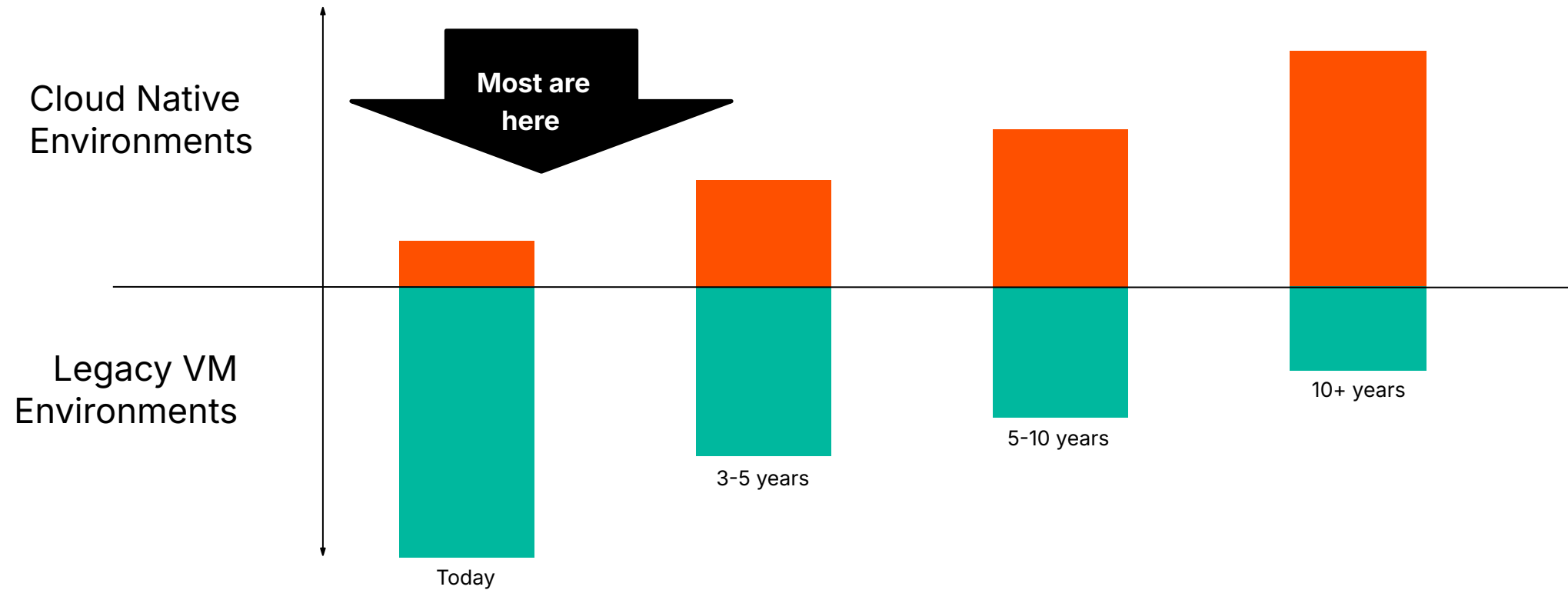
100%

Data Protection

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# Portworx & OCP Virtualization



By 2029, 35% of all enterprise applications will run in containers, an increase from less than 15% in 2023.

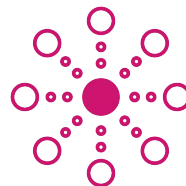
# Why should you run VMs on Kubernetes

## Migrate



Existing VM-based applications can be migrated as-is to Kubernetes from VMware/RHEV/OpenStack environments

## Modernize



Organizations can choose to refactor applications when they want, instead of doing everything at once.

## Unified Management



Development teams can use the same tools, pipelines, and platform for building, managing and diagnosing issues with all applications.



# Portworx + Red Hat

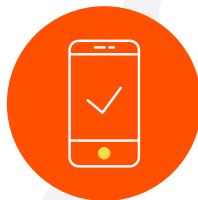
Modern Application  
Development Platform



Optimize Operational  
Costs



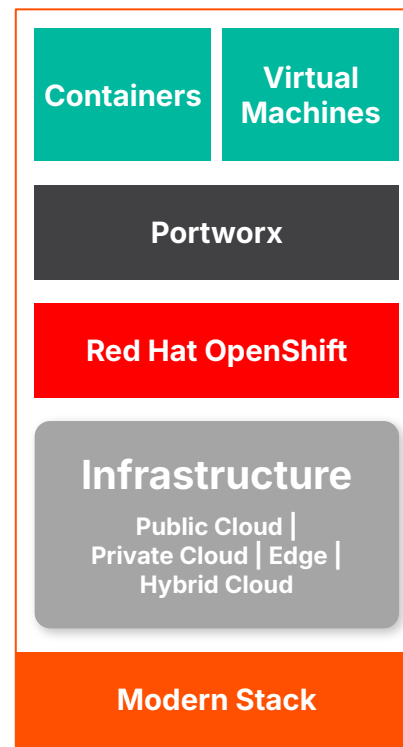
Mitigate  
enterprise risk



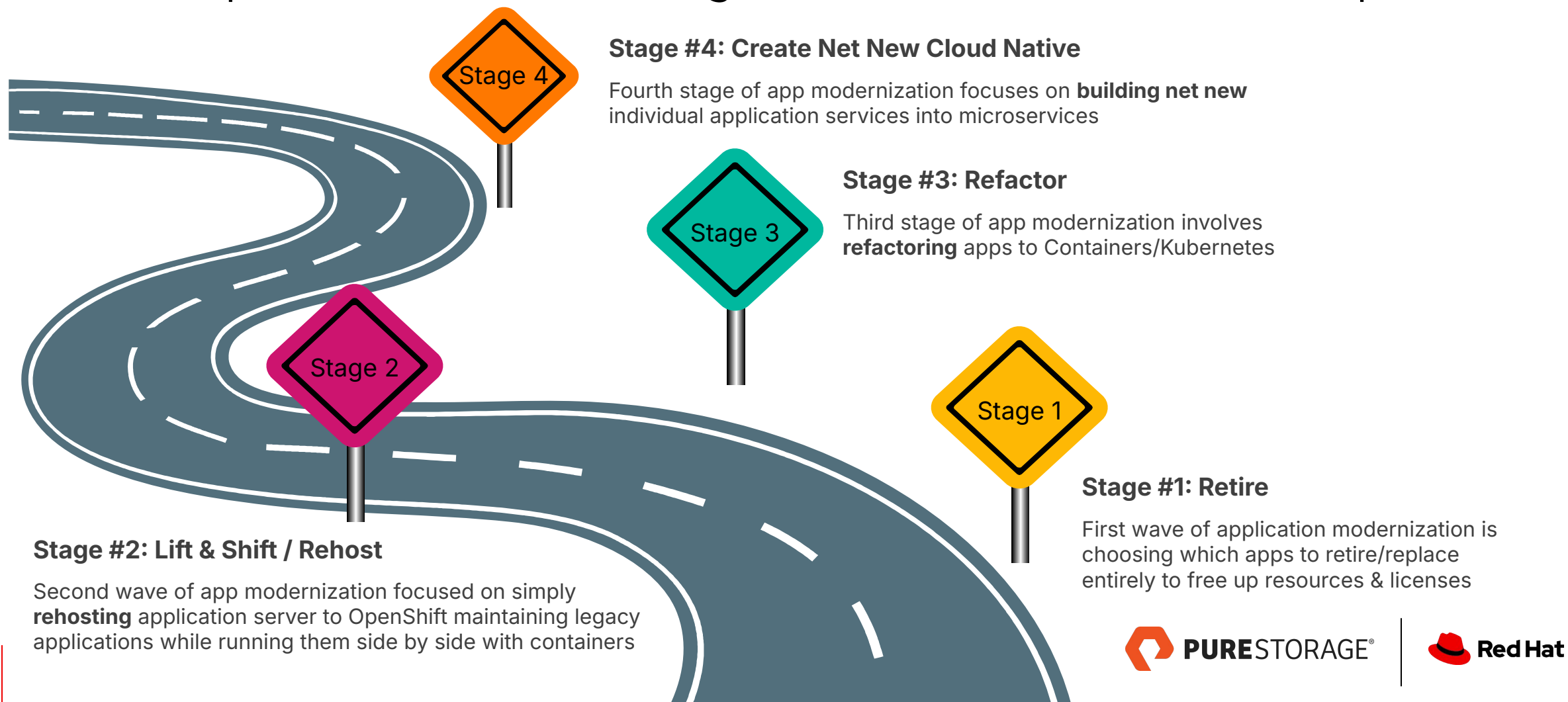
Accelerate Time  
to Revenue



Achieve Data  
Agility



Portworx + Red Hat provide a cloud native platform that enables enterprises to embark on a digital transformation at their own pace



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# Customer Stories



# Globally modernizing applications on a multi-cloud and scalable platform for Kubernetes

An American multinational automobile manufacturer with over \$100B in annual revenue



## Challenge:

**Ford** needed a solution to manage thousands of **stateful apps** as they transformed their **data applications** to the **Openshift platform** and migrated away from a **monolithic architecture**. Ford was looking for **persistent storage management** that offered **scalability** and **portability**, so they could provide reliable access to **data** for applications across their business—from **banking** to **order fulfillment**.

## Benefits:

- Eliminated barriers to innovation
- Rapidly deliver services for a better customer experience

## Solution:

**Ford** uses **Portworx** to manage their **platform-based, cloud-native app storage** in **Openshift**. As a result of **modernization**, they have streamlined their applications, realizing **cost savings** in their **data storage**. Also, they are able to easily **scale** and **migrate applications** in their **multi-cloud environment**. This helps them rapidly deliver **services**, enabling better **customer experience** and increased **innovation**.

## Portworx Services:

- BCDR services
- Storage services



An American  
multinational financial  
services corporation  
specializing in payment  
cards and travel services



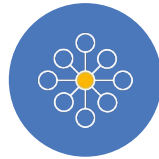
## Challenge

They were struggling to manage the 1000's of Kubernetes clusters and huge volume of cloud-native data on Nutanix.



## Solution

Portworx streamlined and automated data protection workstreams, so routine backups went from hours and days to only taking minutes.



## Benefits Using Portworx

- 90% savings in data protection workstreams
- Performance and availability over ODF





The Scottish Government's biggest directorate, Agricultural and Rural Economy (ARE), promotes sustainable economic growth in agriculture, the food industry, and in rural areas.

## Enabling farmers claim subsidies by improving app developer experience

The ARE directorate develops apps for farmers to claim subsidies based on rapidly introduced agricultural policies. It was a challenge for ScotGov to make their Kubernetes implementation as agnostic as possible while also improving developer productivity to keep up with the rate of data velocity.

Portworx boosts ScotGov app development by managing their data layer and providing reliability and recoverability. Portworx also enables their multi-cloud strategy and their current environment of Openshift on AWS agnostic. It simplifies migration of apps and data between platforms, improving the "dex" (developer experience).

"Portworx helps the Scottish Government build a hybrid and multi-cloud strategy with Red Hat Openshift on AWS, giving them the flexibility to migrate apps and data across different platforms. ScotGov is able to run their workloads anywhere they want with Portworx managing the data management layer."

**Savings**

in developer  
hours for faster  
app development

**Reduced  
Capex**

with migrating  
workloads from  
on-prem to  
containers





# Creating scalable, easy-to-use multiregion OpenShift for stateful applications

Ministero della Giustizia (Italian Ministry of Justice)



## Challenge:

**Ministero della Giustizia** was looking to **modernize** their dated, **customer-facing applications** like institutional and **citizen service portals** on **containers**. They needed an **enterprise backup solution** for their **Red Hat Openshift clusters** that could easily **scale** while still remaining easy to **manage** for a very **small staff**.

## Benefits:

- High performance SDS for OpenShift
- High availability and reliability
- Secure and easy-to-use backup and recovery
- Managed by a small team

## Solution:

**Ministero della Giustizia** is leveraging **Kubernetes** to quickly roll out **new applications** for their **end user experience**. Simultaneously, they are in the process of **containerizing legacy applications** that will be part of their new **Kubernetes workloads**. They protect all these workloads on **Portworx Backup**, so they have all the advantages of **disaster recovery** and **fast backup and restore** for all their **Kubernetes applications**.

## Portworx Services:

- BCDR services
- Storage services
- Backup services



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Q&A





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Thank you

