



# Cloud Native & Containers with Red Hat & Nutanix

# Challenges Of Building And Running Modern, Containerized Applications

**Enterprises' app development outpaces IT's ability to support it**

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Developers will resort to shadow IT and use public cloud resources when their work is held up by lack of access to resources and services

**Kubernetes is deep and complex, and evolves fast with its growing ecosystem of technologies**

Many organizations don't have in-house expertise and can't keep up with new functionality

**Legacy infrastructure isn't built to handle Kubernetes**

Kubernetes is a distributed system, requiring compute, storage, and networking that adapts to the way it operates.



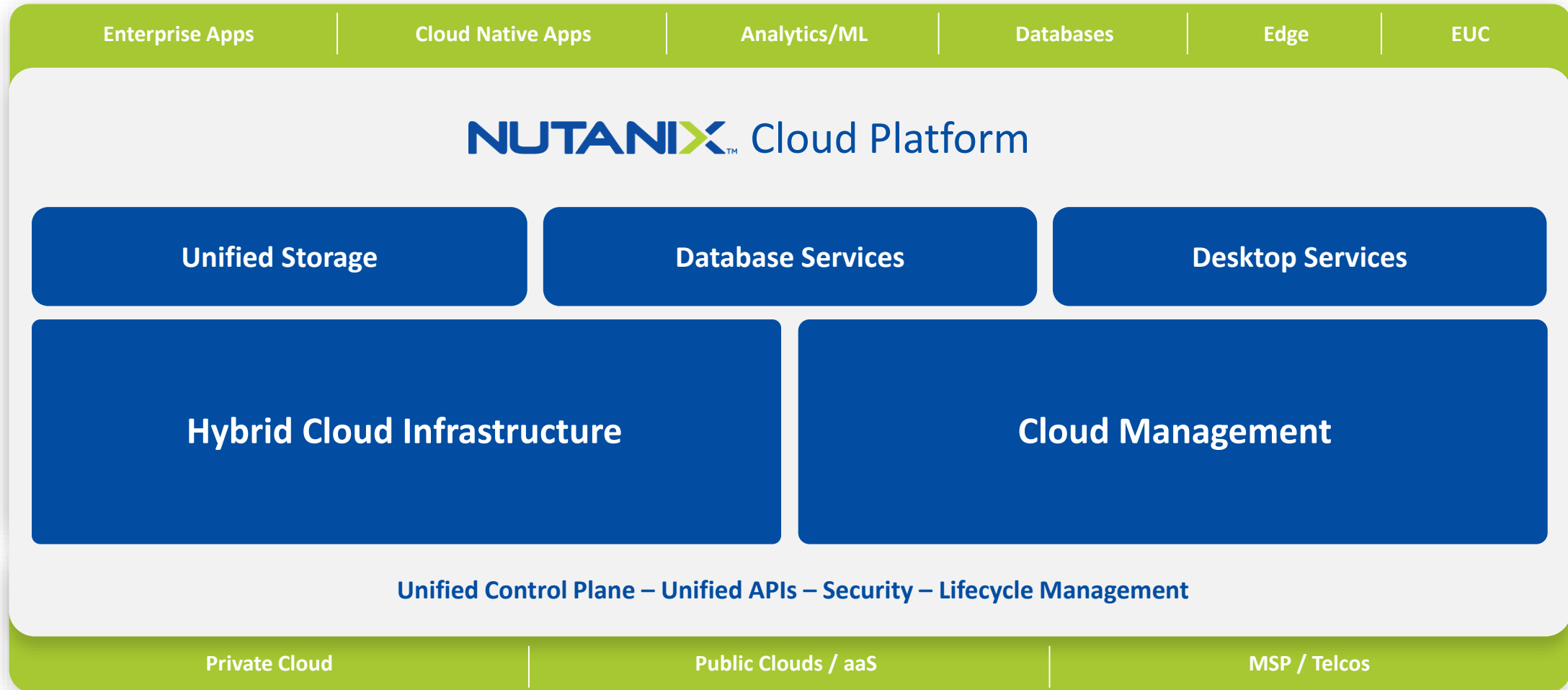


# Our Cloud-Native Mission

Deliver the best infrastructure to run  
cloud native workloads at scale using  
any Kubernetes distribution



# Nutanix: One Platform for Hybrid Multicloud



# One platform for Kubernetes and Containers



NKE



OPENSIFT

**NUTANIX**<sup>TM</sup>  
Cloud Platform

**DELL**EMC

  
**Hewlett Packard**  
Enterprise

**Lenovo**

...

**aws**  


 **Microsoft**  
Azure

# Cloud Native is Better on Nutanix

## Scalable Infrastructure



Kubernetes Clusters  
Worker Node Pools  
HCI Infrastructure Scale

## Invisible Infrastructure



Infrastructure Security  
Kubernetes, Virtualization  
Seamless Lifecycle Ops

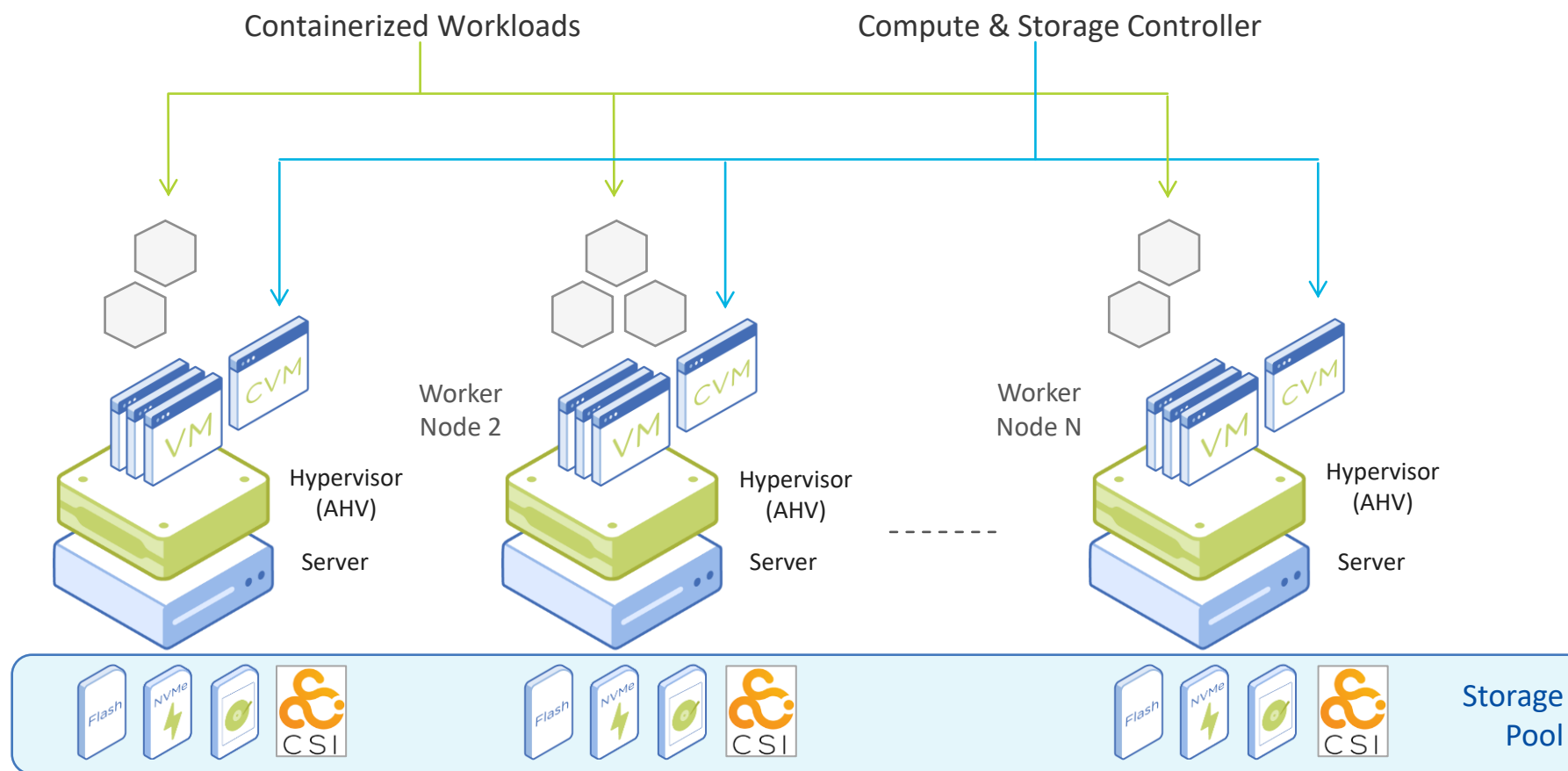
## Built-In Data Services



Volumes, Files, Objects  
Database as a Service  
Certified CSI Drivers



# Flexible Scale-out Architecture

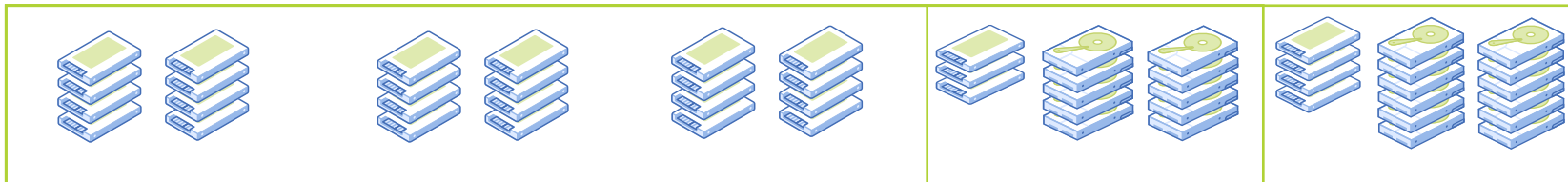
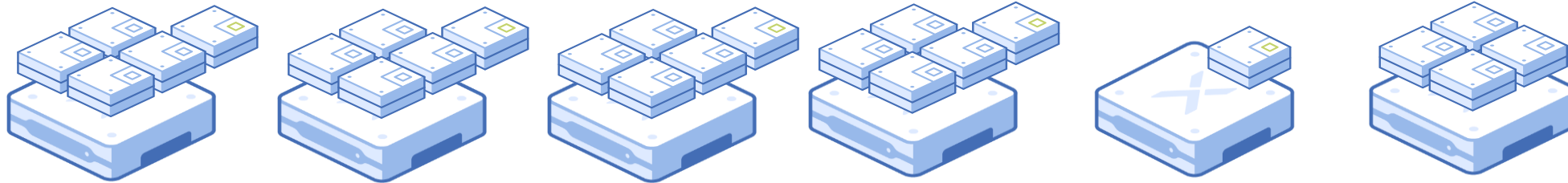
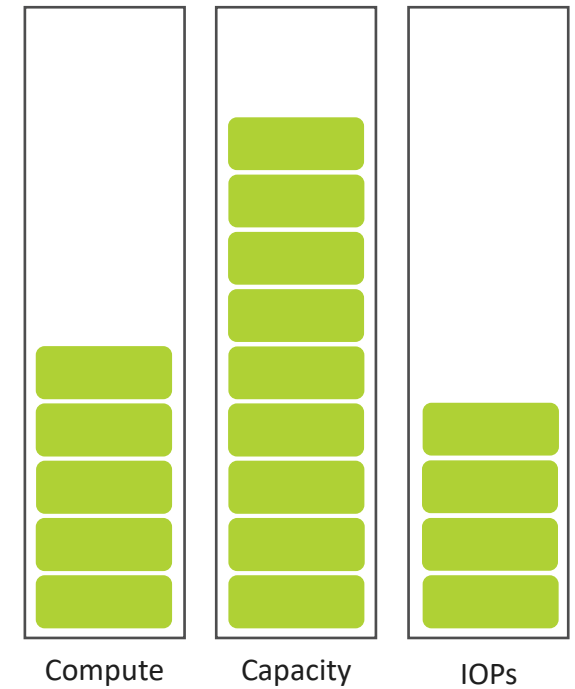


- ✓ Start small and scale without limits
- ✓ Increase capacity one node at a time
- ✓ Keep data local for maximum performance
- ✓ Mix node types and hardware generations



# Flexible Scaling with HCI

- Performance and capacity scale linearly
- Scale compute and storage independently
- Mix & Match node types
- Data automatically rebalanced



Storage Heavy

Storage Only

Compute Only

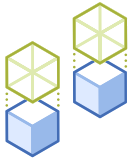




# Predictable Performance when Scaling



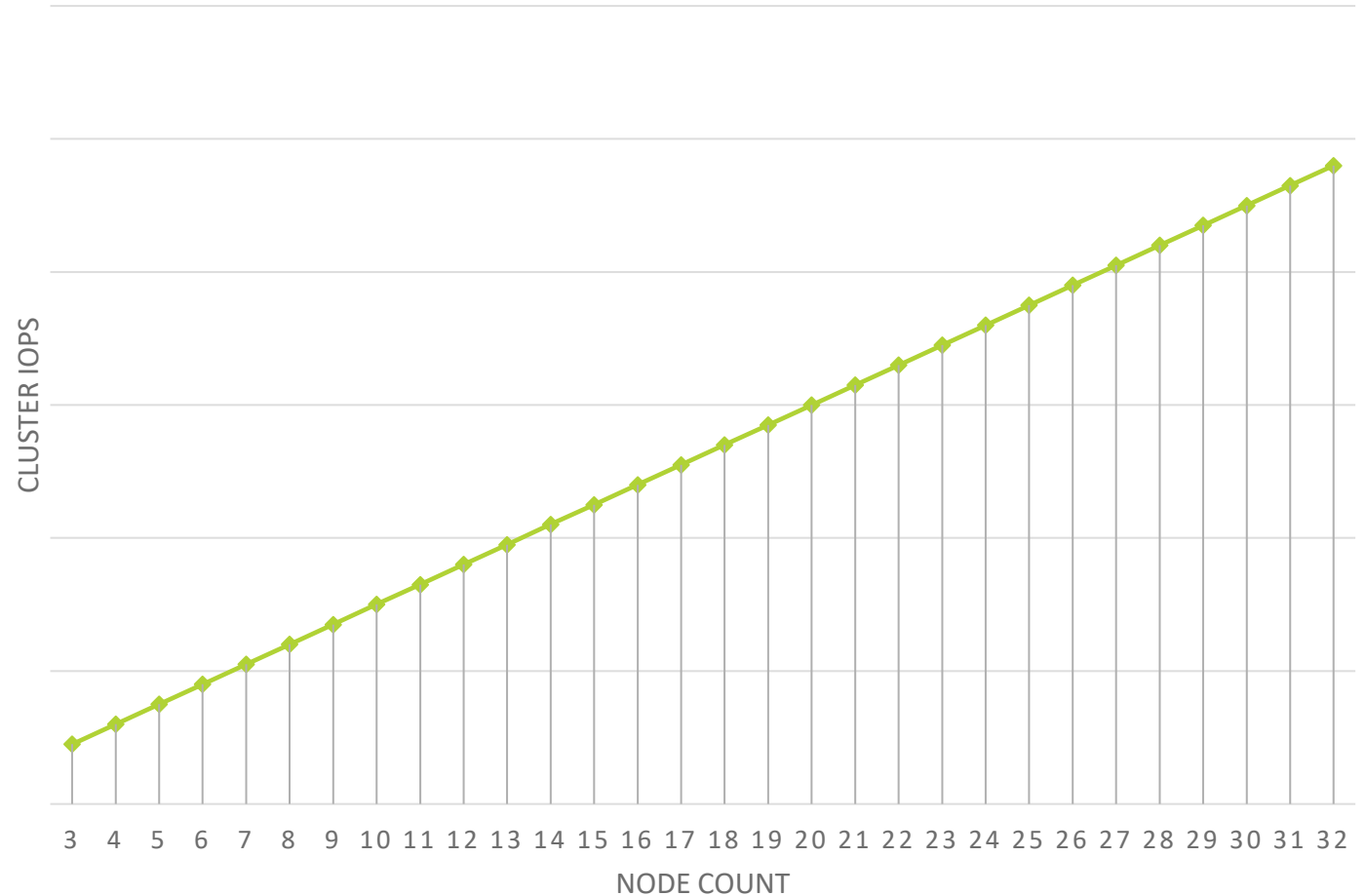
Consistent performance per node



Data Locality minimizes impact of other workloads in the cluster



No penalty for large clusters



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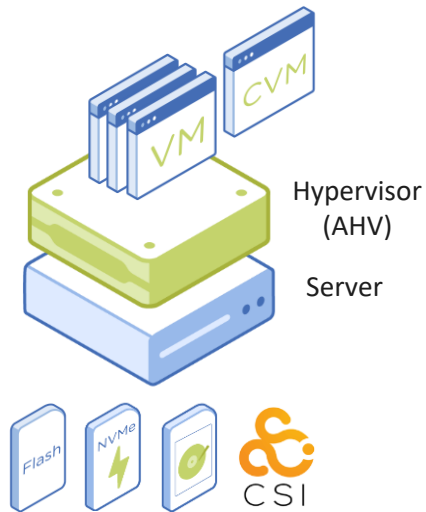
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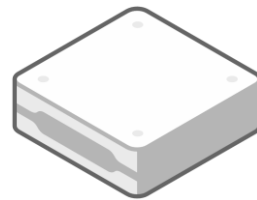
# HCI Is Superior To Bare Metal For Containers

## RESOURCE UTILIZATION

- HCI takes full advantage of powerful CPU scheduling features
- HCI offers superior consolidation over bare metal
- HCI storage fabric optimizes performance and capacity as you scale



Nutanix HCI



Bare Metal Server

## RESILIENCE

- HCI minimizes cluster downtime

## MANAGEMENT AND USER EXPERIENCE

- HCI automates firmware management
- HCI enables simple management of multiple Kubernetes clusters running on the same hardware

## STORAGE AND DATA SERVICES

- HCI simplifies persistent storage configuration and management for stateful containers

## SECURITY

- HCI is more secure as a result of multi-tenant isolation



# LCM: One-Click Infrastructure Upgrades



Easy to Use

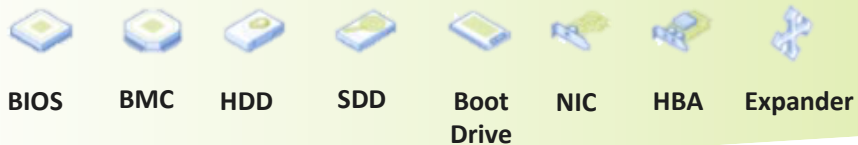


Removes Complexity



Scalable

Software->Firmware Full Stack Upgrades



Unified Upgrade Process



AOS



AHV



Prism



Files



Objects



Calm



Foundation

Automatic Dependency Management

NUTANIX

Hewlett Packard  
Enterprise

DELL EMC

Lenovo

inspur

FUJITSU

intel

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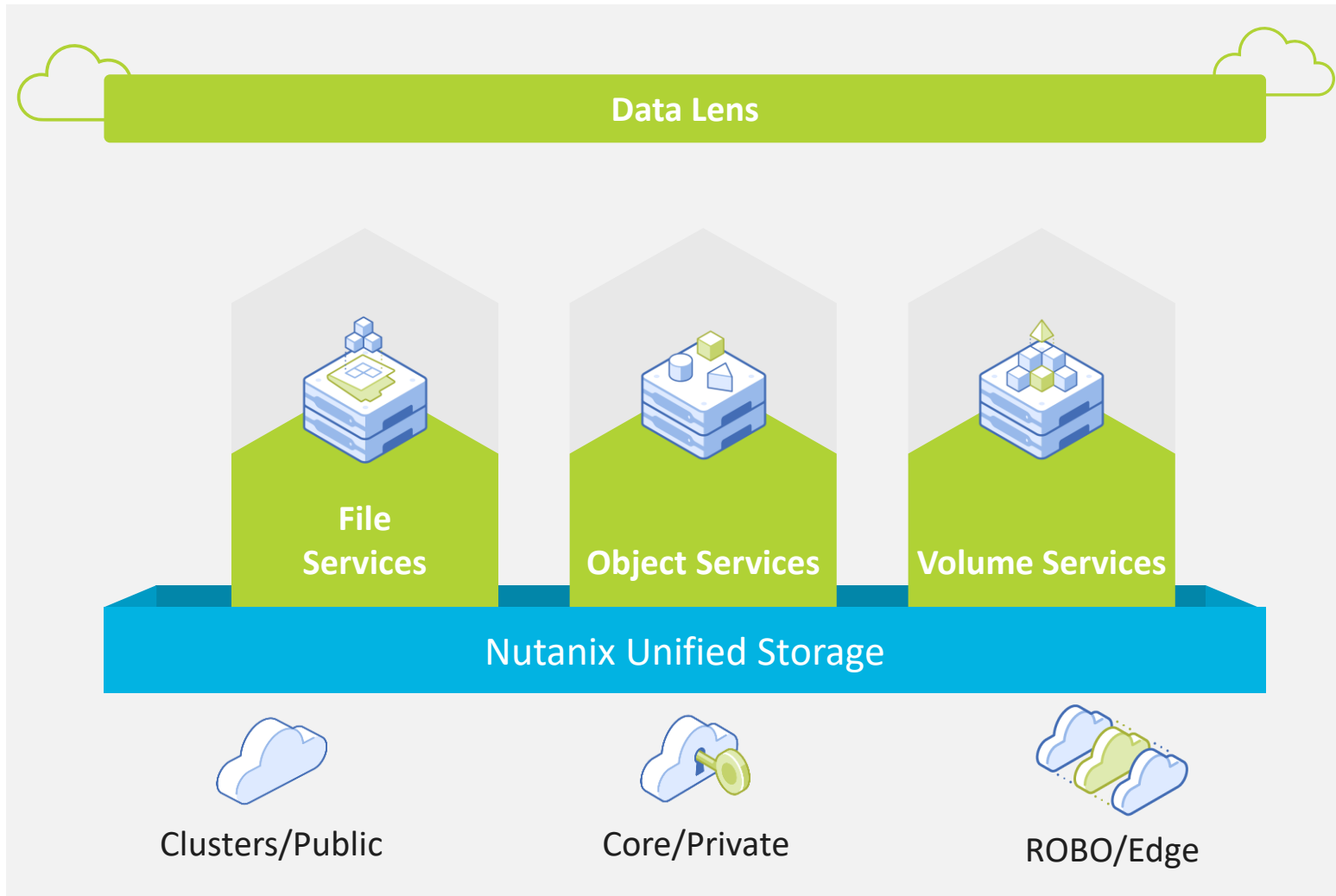
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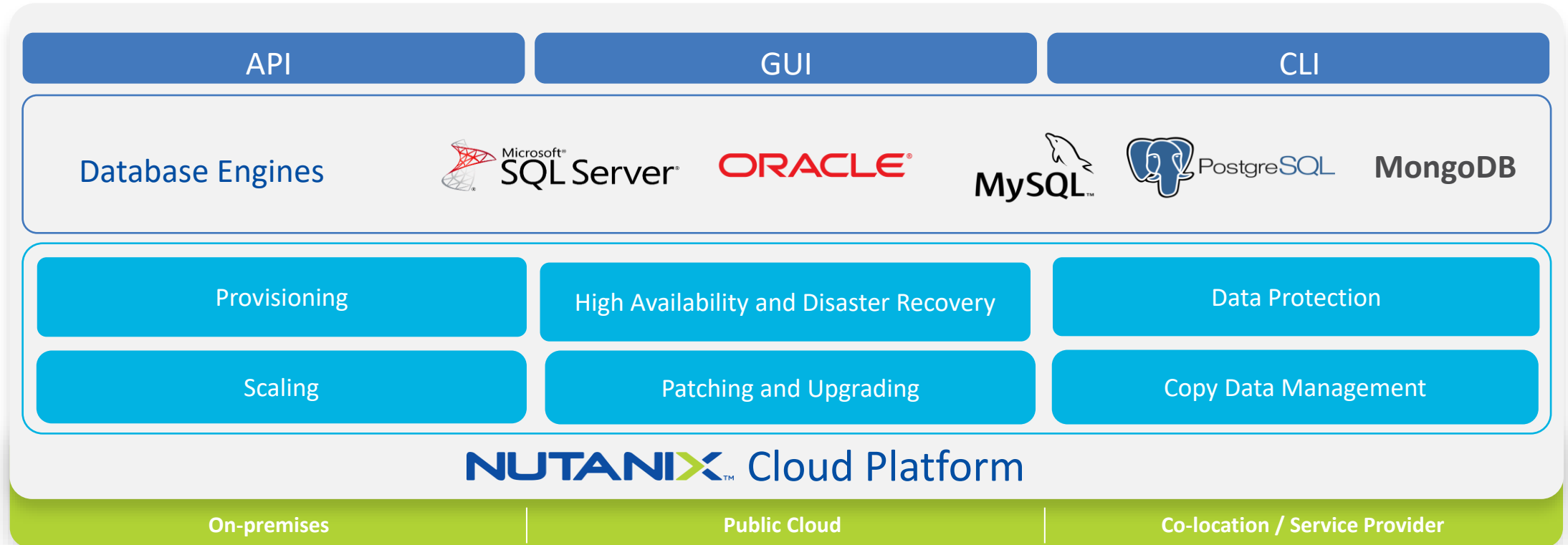
# Unified Storage For A Cloud Native World



- Unified Data Platform
- Full-featured CSI
- Security-First Design
- Web-scale Architecture
- Flexible Consumption



# Nutanix NDB – Hybrid Multicloud DBaaS



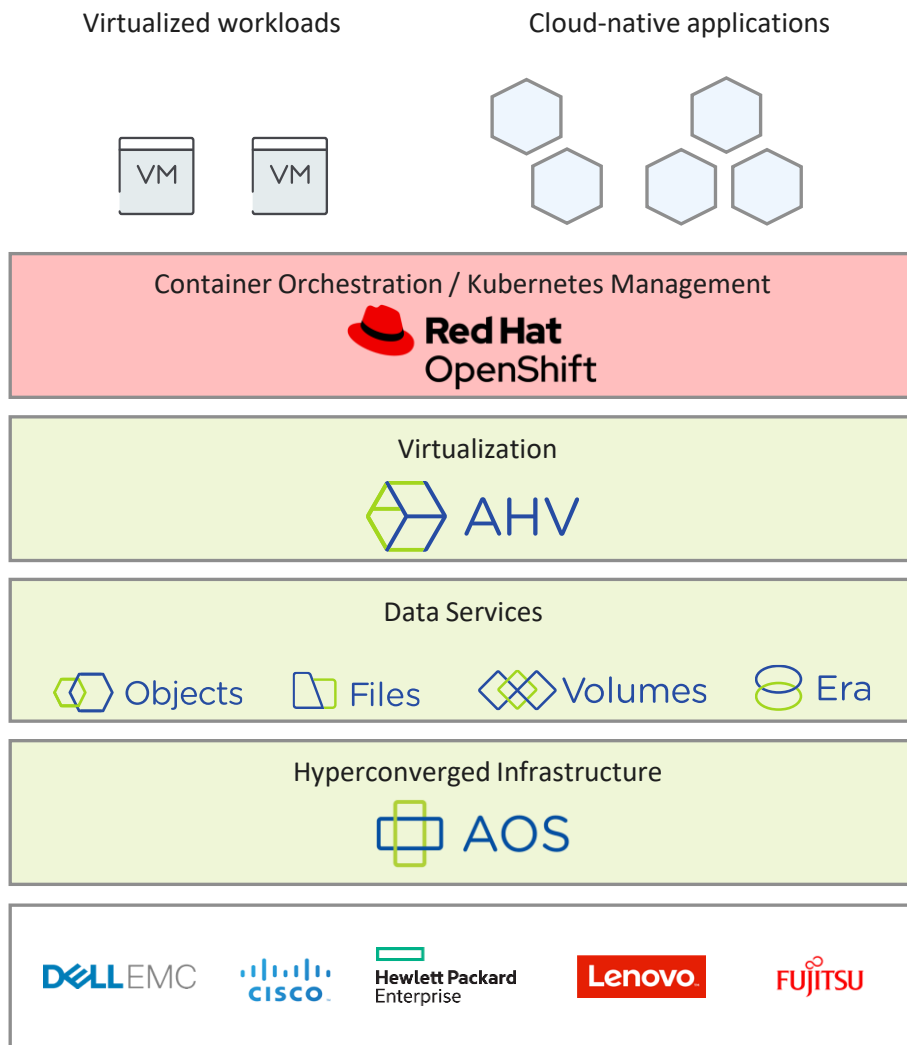
- ✓ Automated management of 100s of databases on hybrid multicloud
- ✓ Meet security, HA, disaster recovery, performance, scale, and cost requirements
- ✓ Enable developers to self-service their database needs
- ✓ Enable DBAs to focus on the organizations most critical databases



# Conclusion



# Build An Enterprise K8s Stack With Nutanix & Red Hat



## • Best Infrastructure for K8S

- Nutanix HCI is architected for Kubernetes and distributed environments (scalable, resilient)
- Integrated storage solutions, automation, and more
- Supports VMs and containers in the same environment
- Integrates with key public cloud platforms and cloud native technologies via strategic partnerships

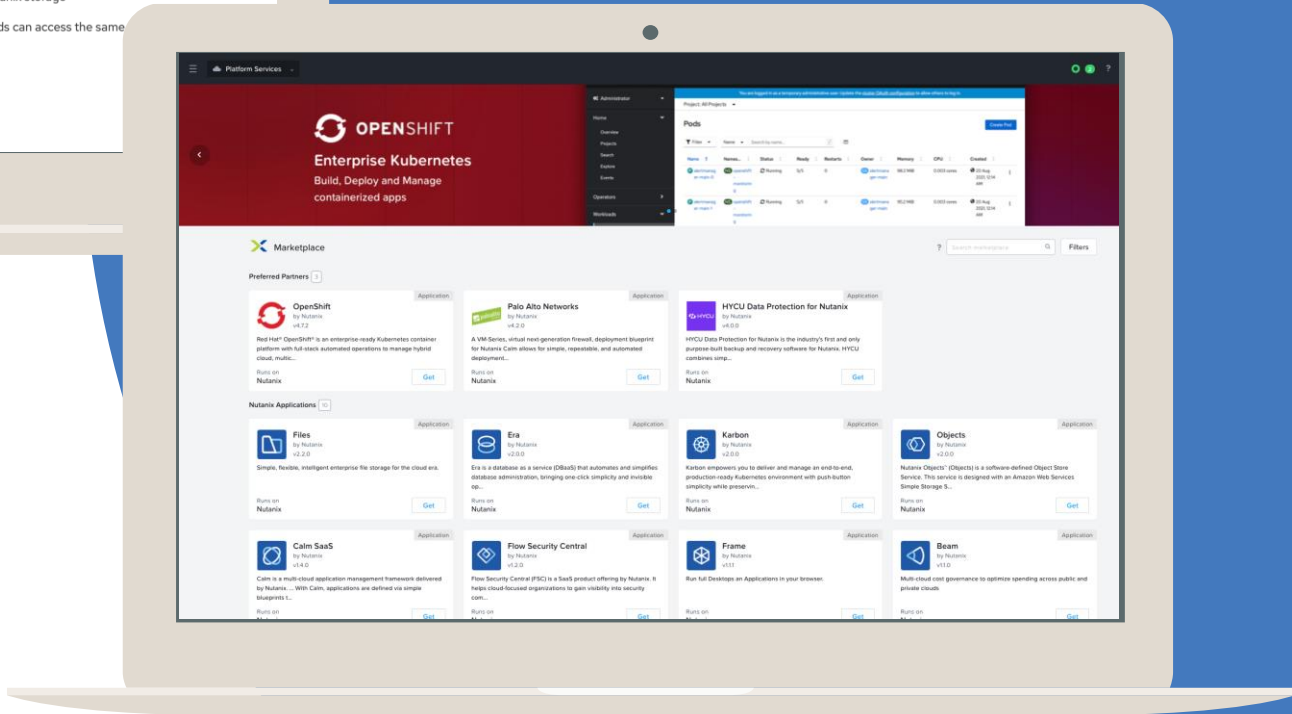
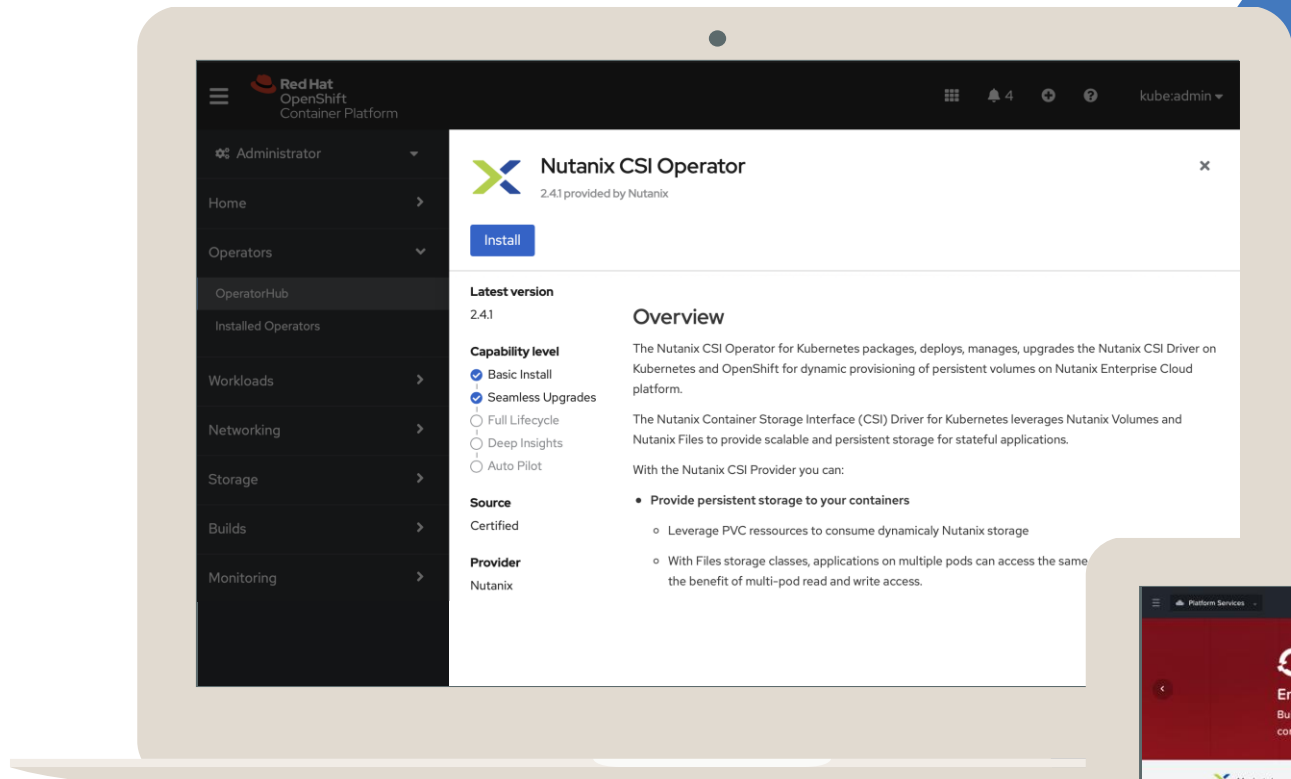
## • Benchmark for operational simplicity

- Deploys rapidly & reliably
- Offers an intuitive, public cloud-like user experience
- Full stack support from a single leading vendor

## • Accelerates app development

- Easily meet developers' needs for IT resources and services





NUTANIX.  
Test Drive Private Cloud.

TRY FOR FREE



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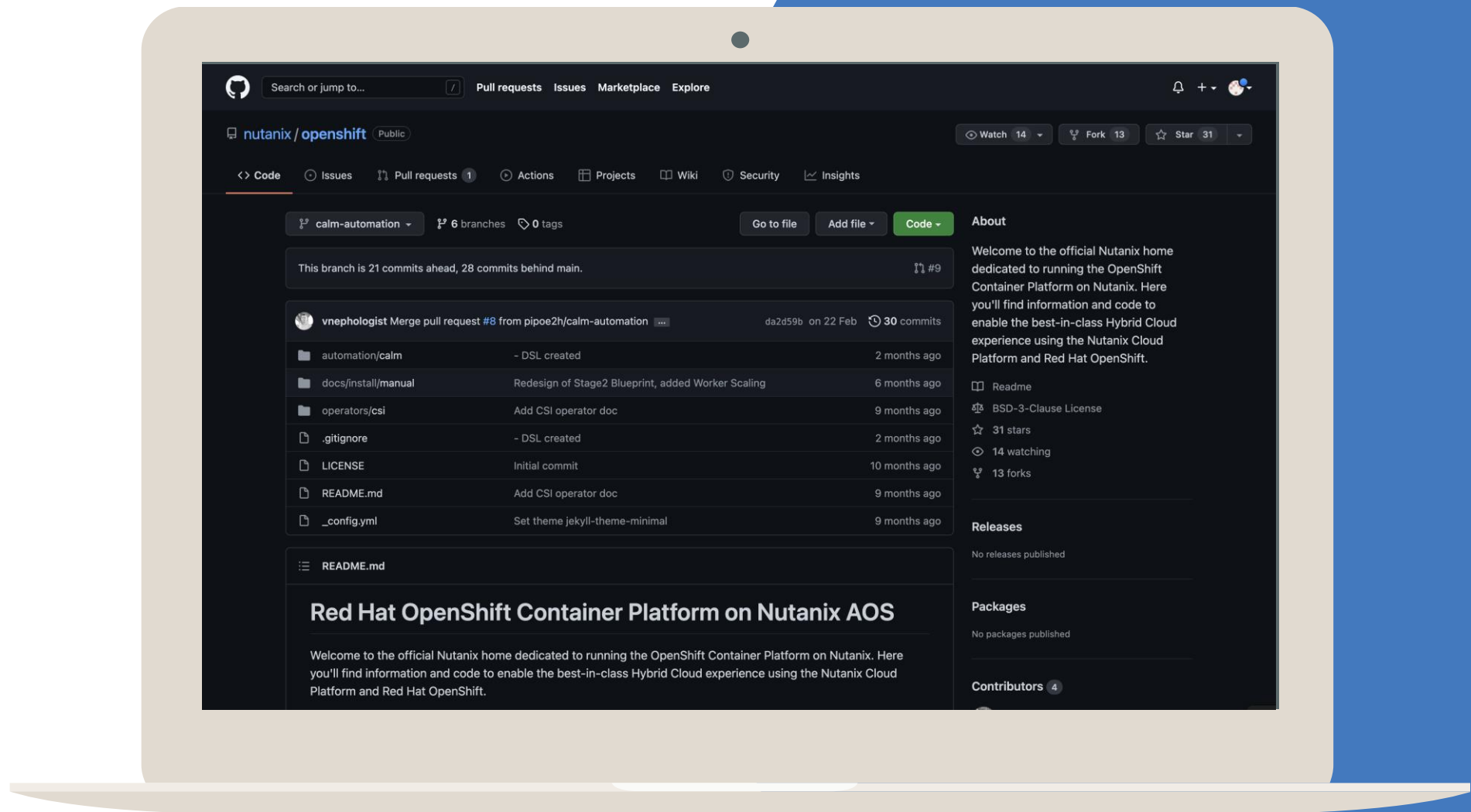
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# Deploying Red Hat OpenShift on Nutanix AHV

By Jose Gomez

February 25, 2022

7:00 am



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