

Nutanix

Solutions and value proposition



Roman Kalchenko

NUTANIX.



Agenda

- 1.** Nutanix – true hybrid cloud
- 2.** Architecture
- 3.** Nutanix ecosystem
- 4.** Use-Cases & Customer's stories

True Hybrid Multicloud

NUTANIX

One Platform for Hybrid Multicloud

Nutanix Cloud Platform

Unified Storage Services

Database Services

Desktop Services

Cloud Infrastructure

Disaster Recovery

Container Services

Data + Network Security

Advanced HCI

Virtual Networking

Scale-Out Storage

AHV Hypervisor

Cloud Manager

App Lifecycle Mgmt

Security Central

Cost Governance

Self Service Infrastructure

AI Operations

Unified Control Plane | Unified APIs | Security | Lifecycle Management

Simplest Way to Implement Hybrid Cloud



VDI



Database



Enterprise Apps



Cloud Native



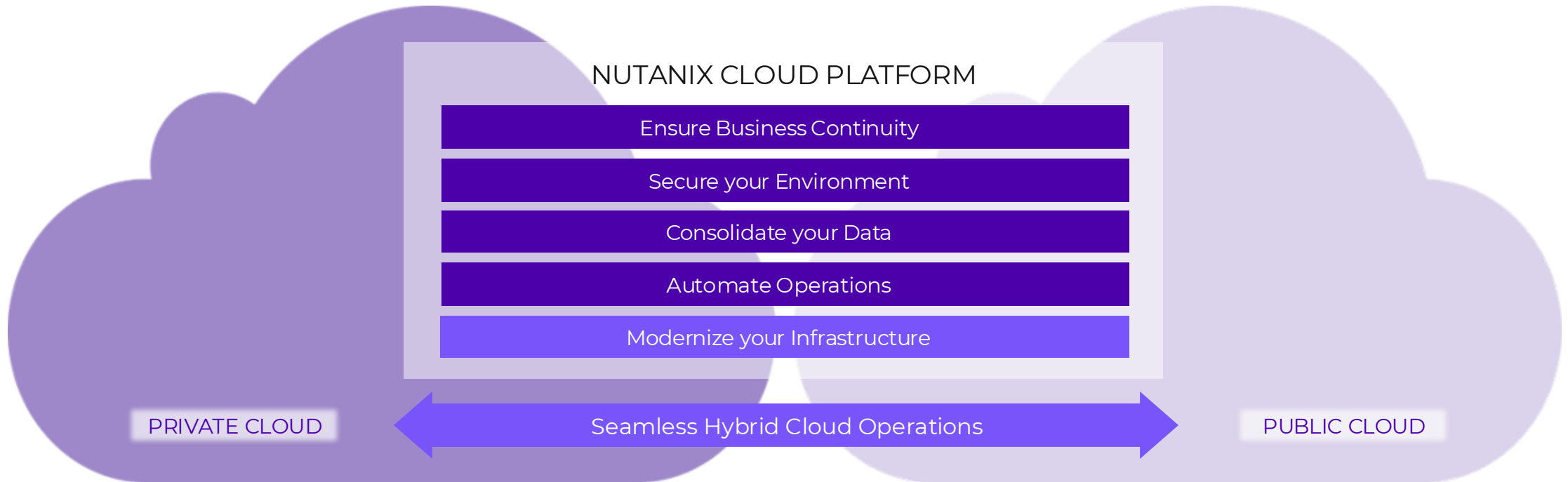
ROBO & Edge



Dev & Test



Analytics



NUTANIX



DELL EMC

Lenovo

FUJITSU

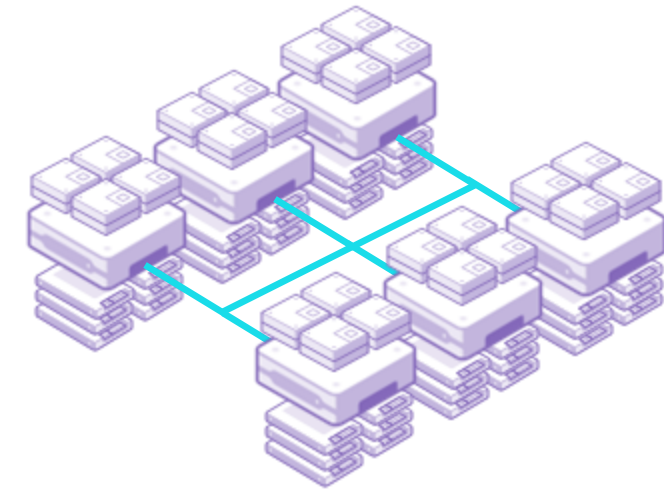
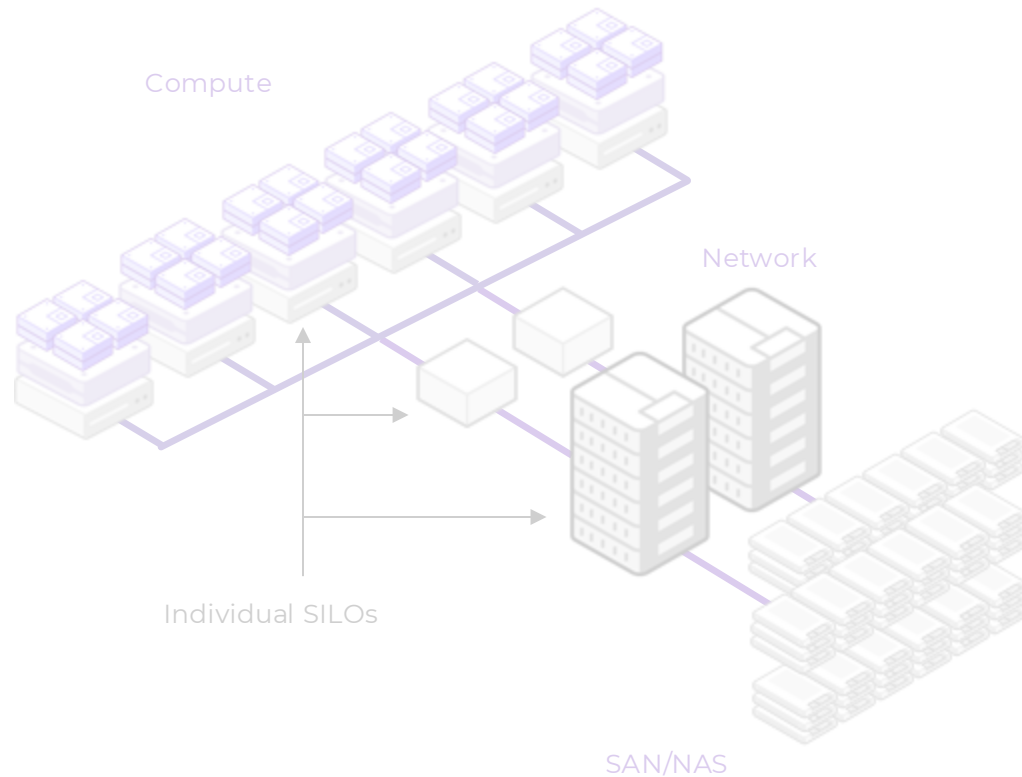
Hewlett Packard Enterprise



Architecture

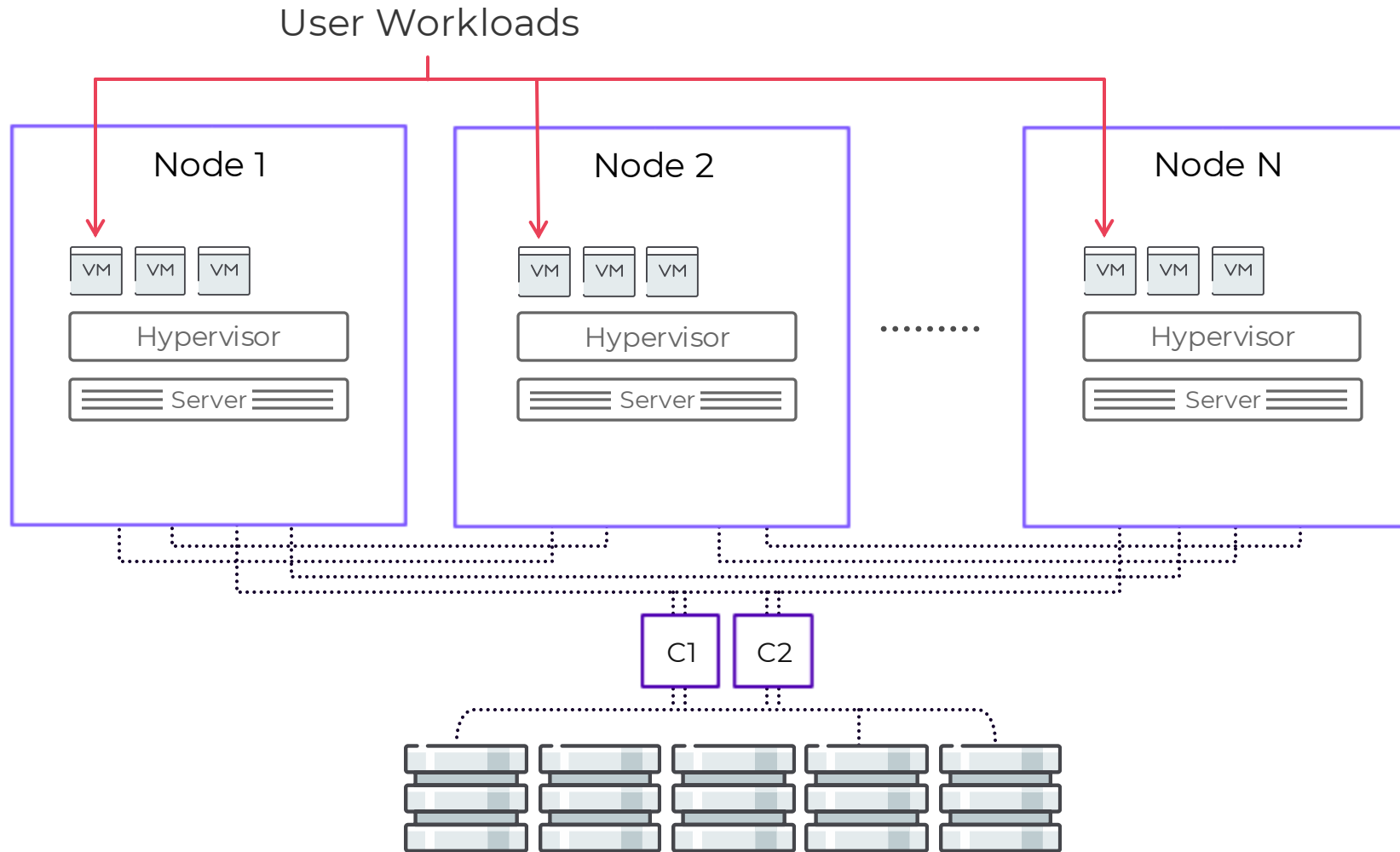
NUTANIX

Nutanix HCI is a Fully Distributed Infrastructure

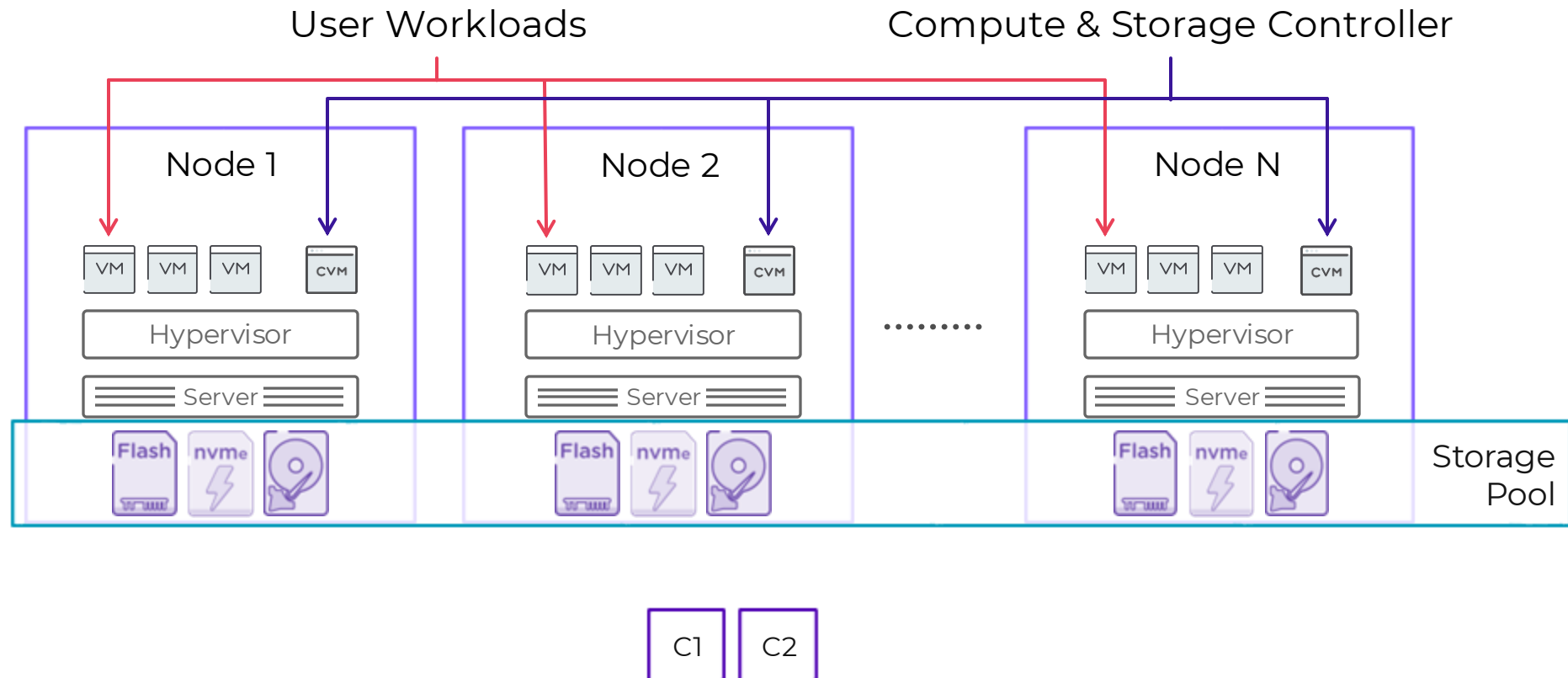


Integrated Compute, Storage, Virtualization,
Network, and Security

Converging Storage Services



Flexible Scale-out Architecture

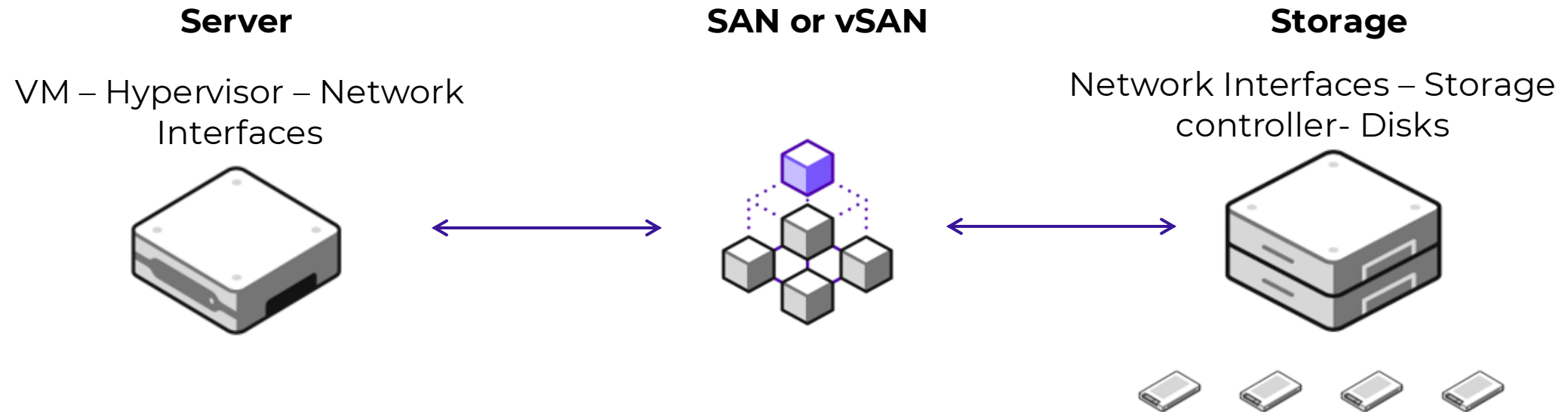


- ✓ Start small and scale without limits
- ✓ Increase capacity one node at a time
- ✓ Keep data local for maximum performance
- ✓ Mix Node types and hardware generations

3-tier & other HCI bottle neck

Long data path increases latency

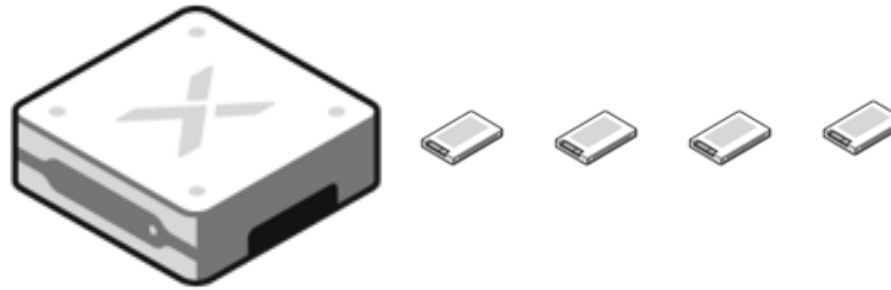
Performance limited by network (bandwidth and interfaces q-ty)



Key technology – Hot Data Localization

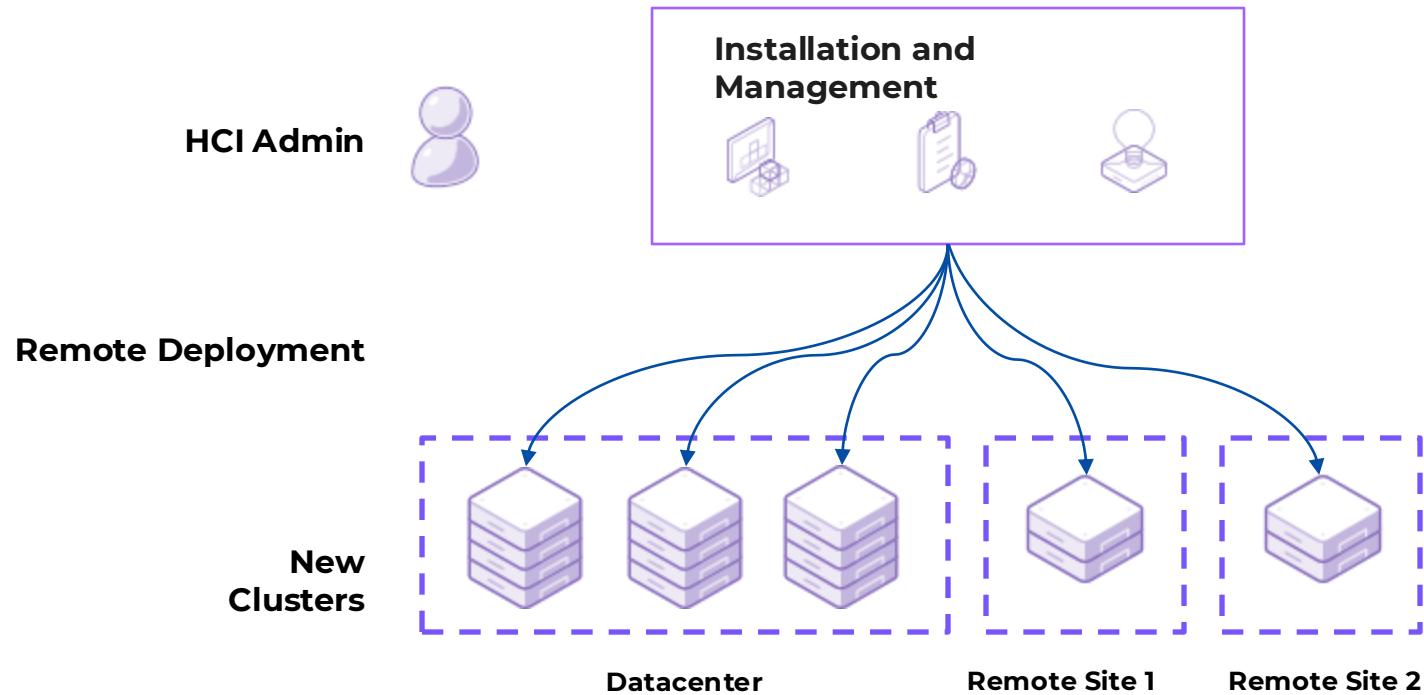
Localization of hot data on the fastest server disks where the virtual machine is running

VM – Hypervisor – CVM – Fastest
local disks



Acceleration
Reduce Latency
Increased overall performance

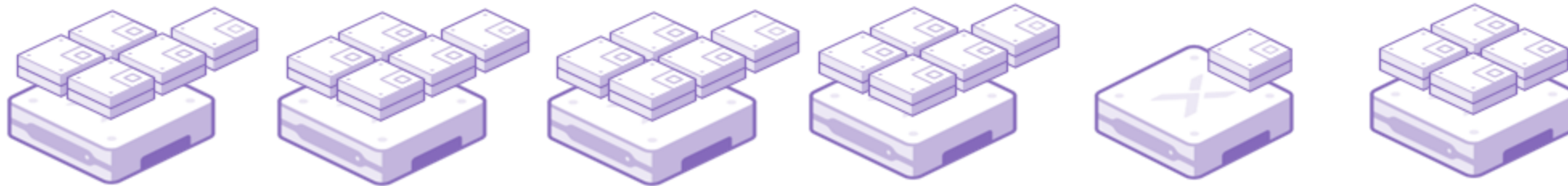
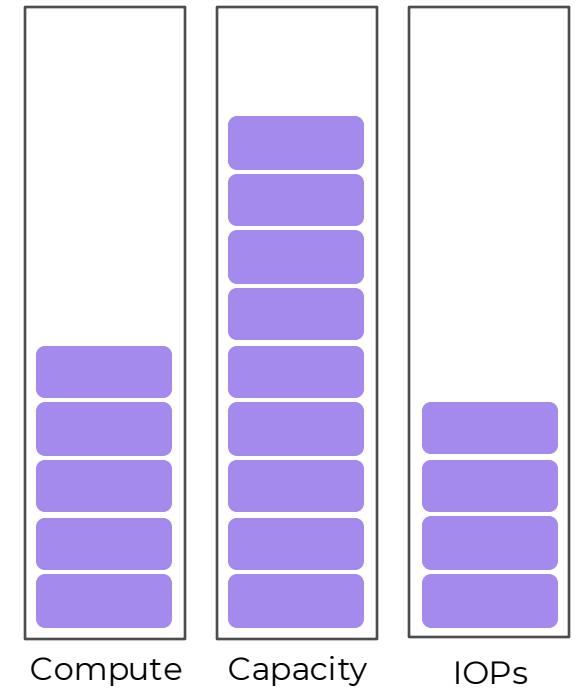
Simple, Fast Deployments



- **Complete install in less than 1 hour**
- **Single installer for all deployments**
- **Image multiple clusters, across sites**
- **Deploy Hypervisor + AOS**

Flexible Scaling with Nutanix HCI

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



Storage Heavy

Storage Only

Compute Only

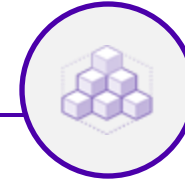
Simplified Maintenance and Upgrades



Easy To Use



Intelligent



Scalable

Software → Firmware Full Stack Upgrades



AOS



AHV



Prism



Files



Objects



Calm



Foundation

Automatic Dependency Management



BIOS



BMC



HDD



SSD



Boot Drive



NIC



HBA



Expander

Unified Upgrade Process

NUTANIX

CISCO

DELL EMC

Lenovo

Hewlett Packard
Enterprise

FUJITSU

Unified Management

Self Service

Apps

Security

Server

This block contains several overlapping screenshots of IT management tools. On the left is the OpenStack dashboard showing 'Images & Snapshots' and 'Volume Snapshots'. In the center is the VMware vRealize Automation console displaying a 'Service Catalog' with various application templates like 'Cisco UCS Director', 'CentOS 6.4-bit Base', and 'WordPress 4.3.1'. On the right is the Palo Alto Networks Panorama configuration page showing a table of 'Committed Configurations' with columns for 'Version', 'Details', and 'Action'. A 'Load' button is highlighted in red in the table.

Storage

Data Protection

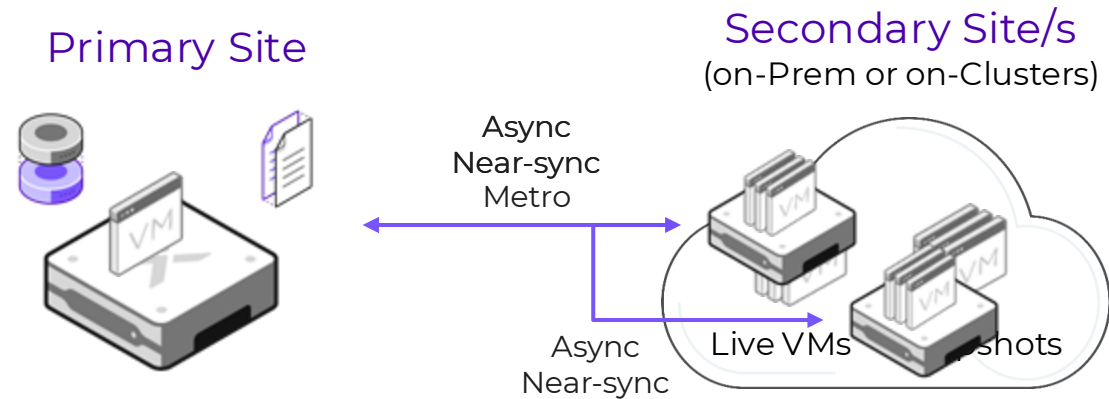
Virtualization

This block features screenshots of storage and virtualization management tools. On the left is the EMC Unisphere interface showing storage pool configuration. In the center is the Veeam Backup & Replication console displaying 'Provisioning Storage Systems: SPAR_UN11 - Virtual Volumes' with a table of virtual volumes and their RAID configurations. On the right is the VMware vSphere Web Client showing the configuration details for a virtual machine named 'esx-01a.corp.local', including its hardware and configuration settings.



Disaster Recovery

Integrated
1-Click Disaster
Recovery



- 1-click failover, failback and test
- Automatically orchestrate recovery plans
- Multi-Site Replication

One User Interface for Management & Operations

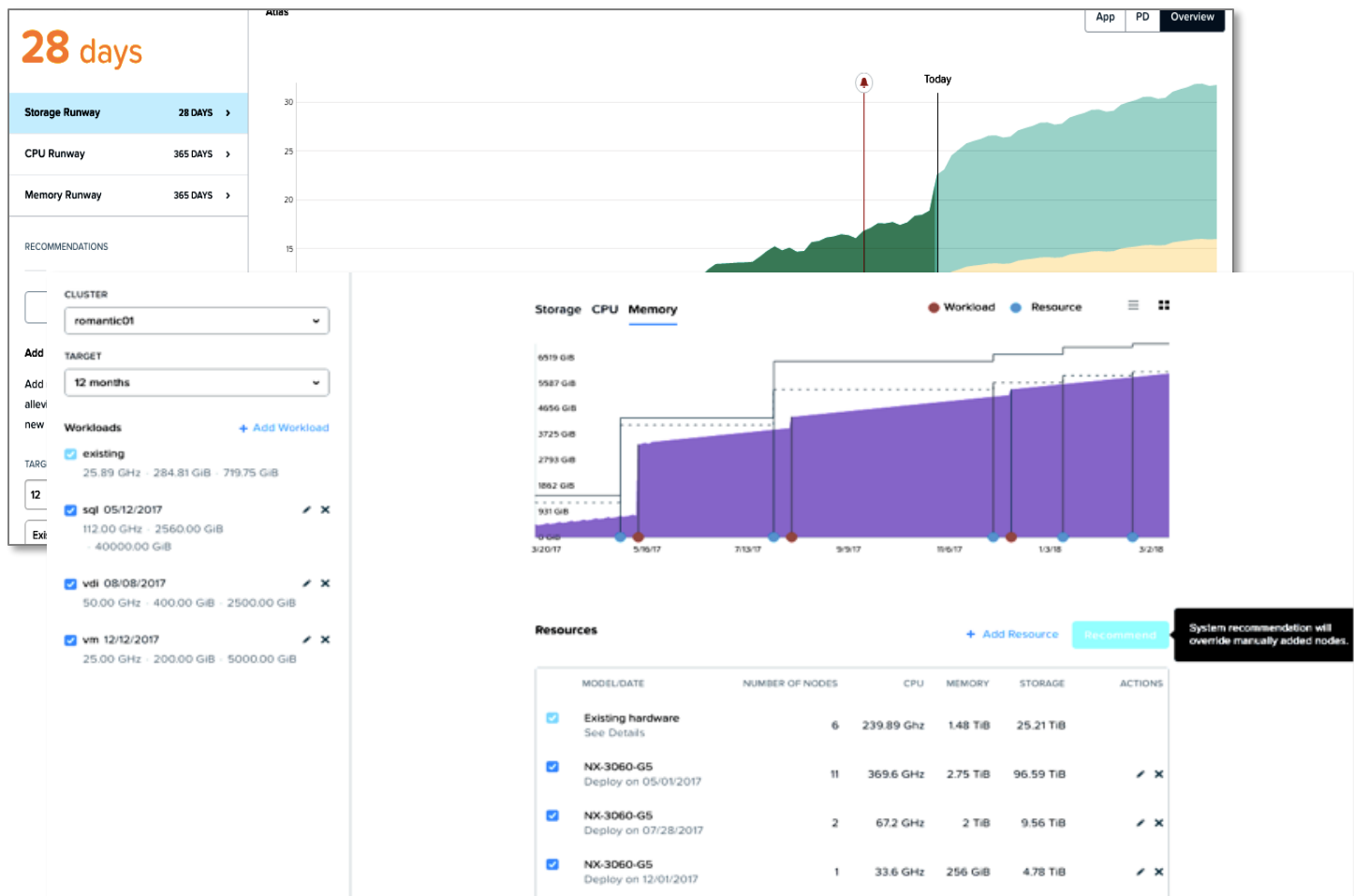
Integrated
Best-in-Class
Backup



- Backup and archive data
- Use popular data protection software

How to Plan and do JIT Forecasting

Keep resources used efficiently



What is it?

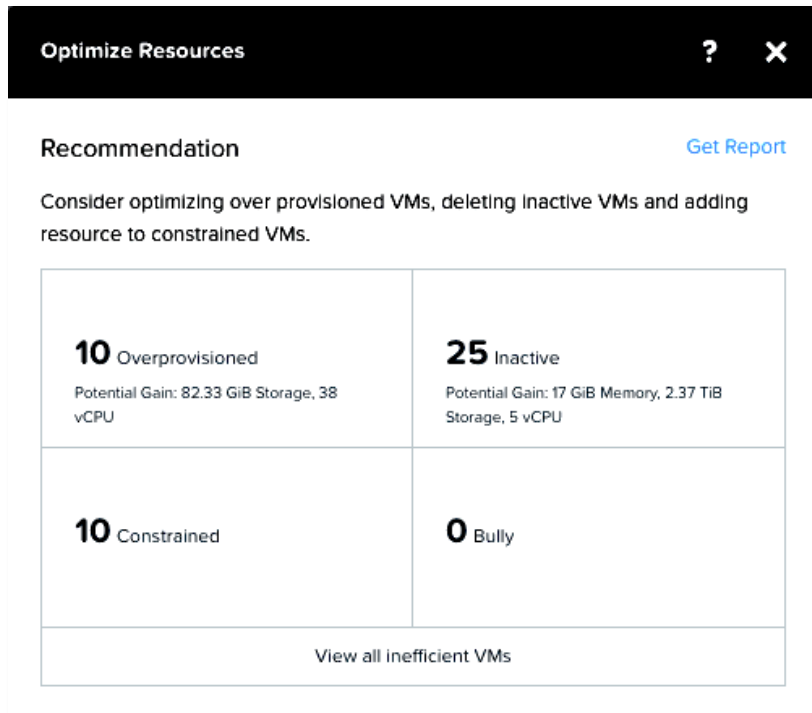
- Detailed capacity forecast
- Scenario-based analysis
- One-click recommendation for just-in-time expansion
- Ready-to-present PDF report
- Powered by X-FIT machine learning engine

Benefits:

- Early warning for capacity shortage
- Eliminates guesswork and waste
- Enables pay as you grow capacity expansion to match the business demand

How to Leverage Automated Optimization

Minimize Spend with **Anomaly Detection Optimization** backed by ML



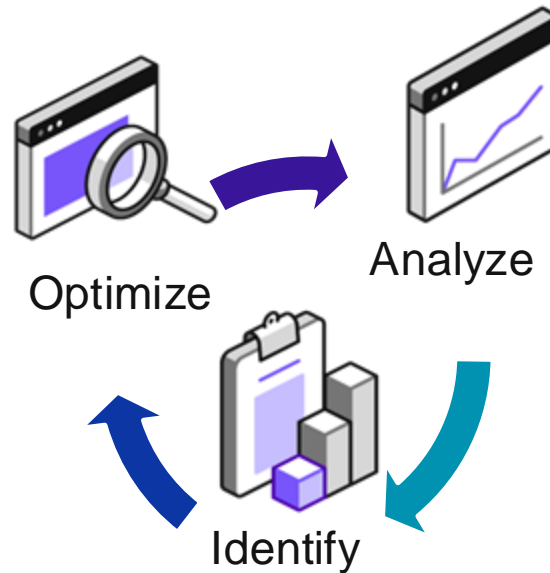
Optimize Resources ? x

Recommendation [Get Report](#)

Consider optimizing over provisioned VMs, deleting inactive VMs and adding resource to constrained VMs.

10 Overprovisioned Potential Gain: 82.33 GiB Storage, 38 vCPU	25 Inactive Potential Gain: 17 GiB Memory, 2.37 TiB Storage, 5 vCPU
10 Constrained	0 Bully

[View all inefficient VMs](#)



What is it?

- Automatic learning of the performance behavior of VMs
- Detection of the anomaly when a VM deviates from its normal performance behavior.
- Powered by X-FIT VM behavior learning engine

Benefits:

- Provide an early warning of the performance issue in VMs
- Lower admin overhead – remove the alert storm and let admin focus on what's important

AHV Unlocks the Hybrid Cloud

AHV



AHV Powers All Clouds.

AHV is a powerful, hybrid substrate software foundation.



AHV is Feature Complete.

AHV focuses on running your applications without complexity.



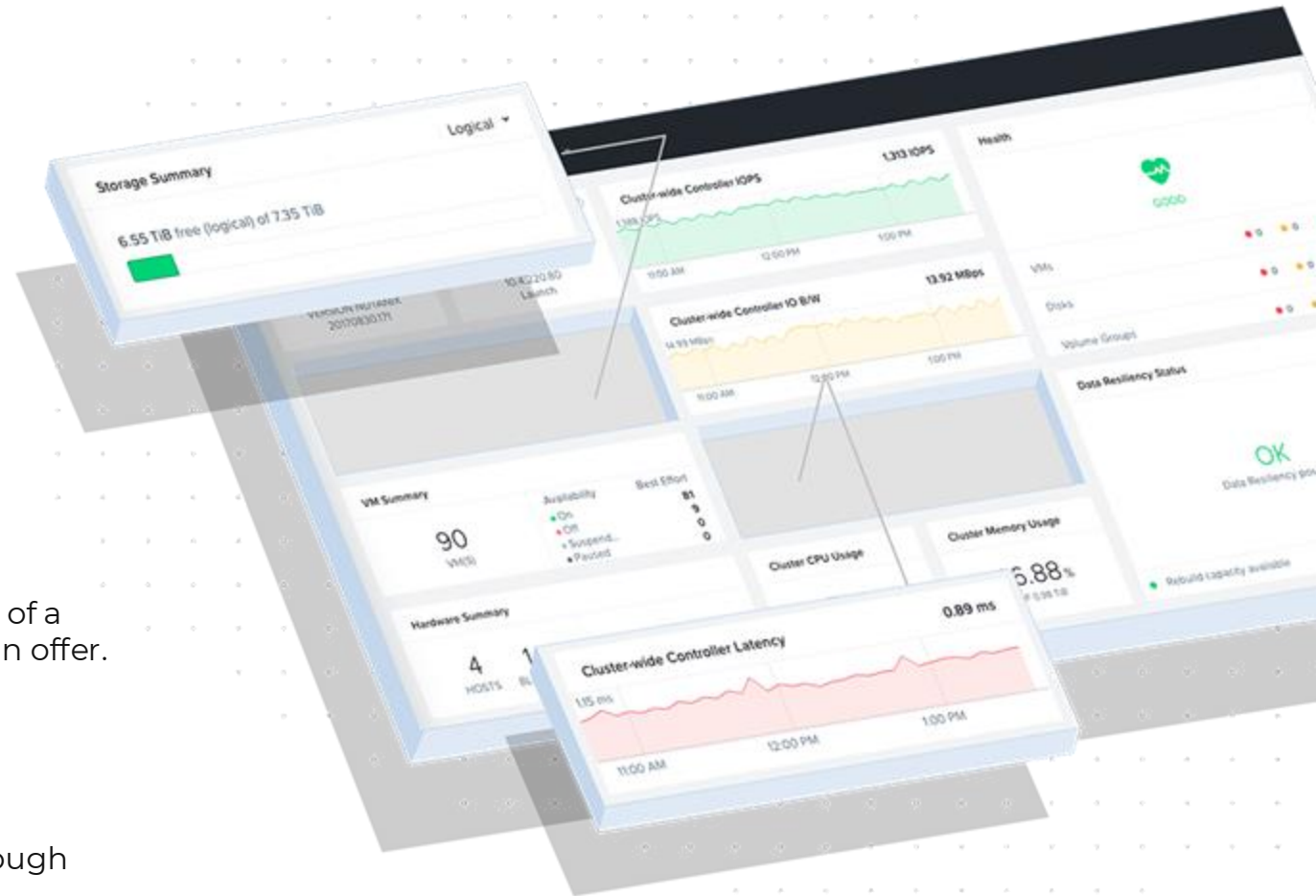
AHV is Fully Integrated Into Nutanix.

Take advantage of all the features of a complete hybrid cloud Nutanix can offer.



AHV has Security Built-In.

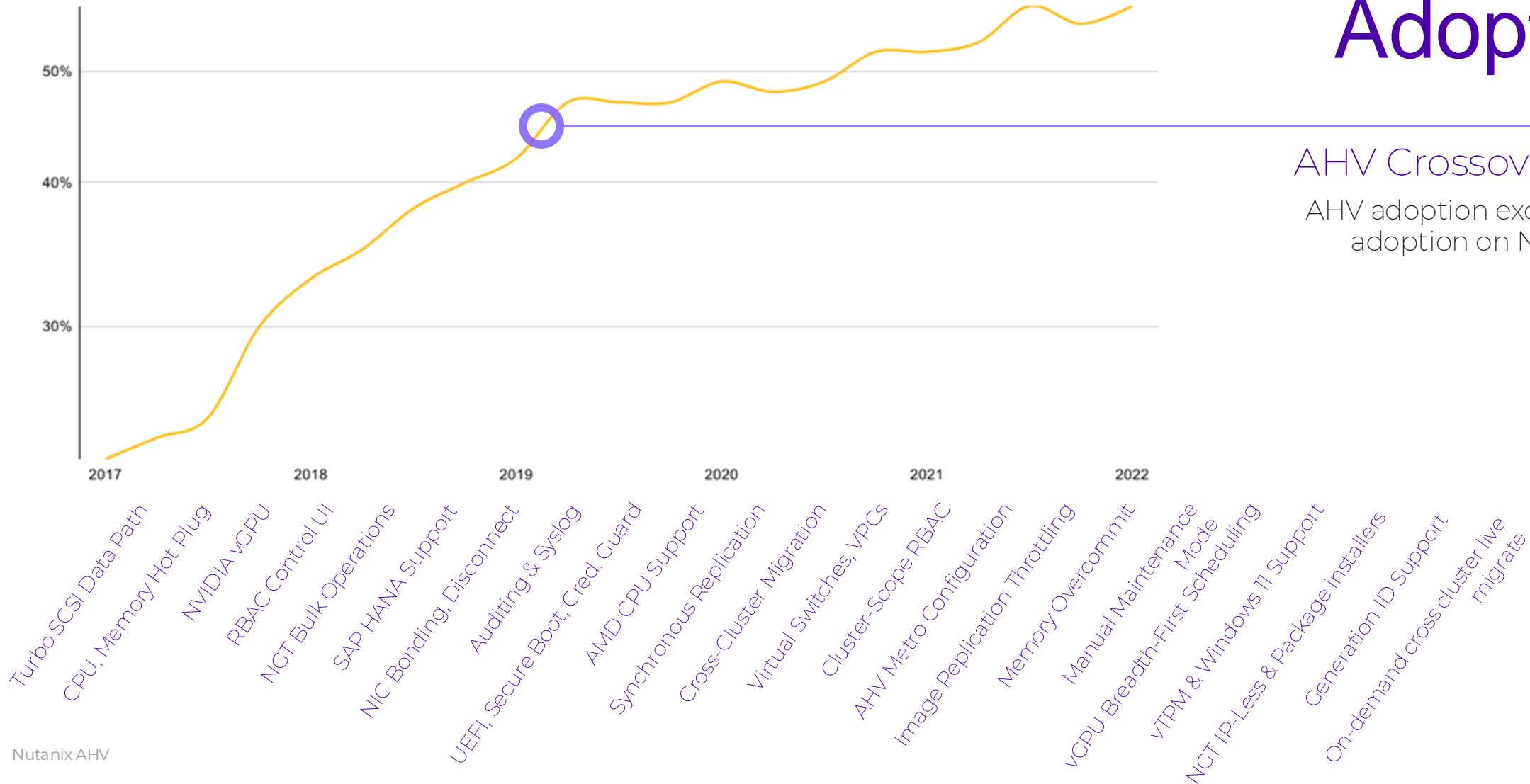
Hardened by default, secured through automation, ready for what's next.



AHV Adoption Growth

Continuous Enterprise Value Delivery

70% Adoption



AHV Crossover Point

AHV adoption exceeds ESXi adoption on Nutanix

Security Built-in to Nutanix Cloud Infrastructure



Identity and Access

- Multi-factor Authentication (MFA) via SAML 2.0
- Role Based Access Controls (RBAC)
- Restricted Shell



Security Baseline and Audit

- Built-in security baselines
- Standards based configuration
- Self-healing – ensures continuous compliance



Data Protection

- Data-at-rest encryption w/ Key Management
- FIPS 140-2 validated encryption modules
- Replication and Recovery Planning



Compliance

- FIPS 140-2, Common Criteria, DoDIN APL
- ISO 28000
- Asset Discovery

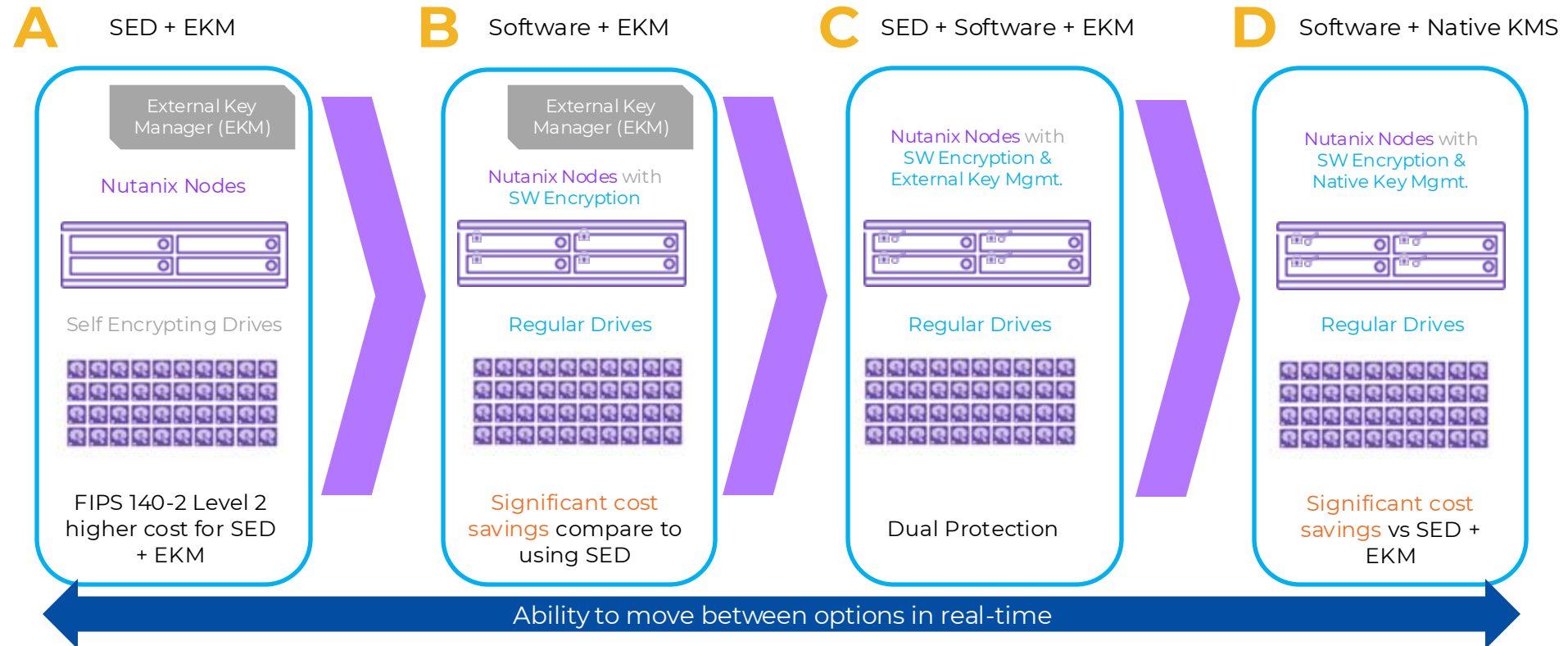
Data Security

- Why Does Encryption Matter?

- Protect data-at-rest in clusters against thefts
- Required for compliance goals

- Nutanix Solution Options:

- o SOFTWARE ENCRYPTION WITH NATIVE KMS OFFERS SECURITY WITH SIMPLICITY
- o USE SED DRIVES IF REQUIRED (FIPS 104-2 LEVEL 2 OR HIGHER)



Flow is now Flow Network Security



Nutanix Security Central



Compliance



Monitoring & Alerts



Intelligence

Flow Network Security (Microsegmentation)



Visualize



Automate



Secure

Flow Virtual Networking



Decoupled



Ubiquitous



Consistent



VMs

NX, DX, OEMs

Private Cloud



NC2A, NC2Z

Public Cloud

Ease of Security Operations

- Security Planning and Dashboards
- GovCloud Support
- Multi-Cloud Compliance
- Query Language and Network Anomaly
- Findings & Threat Alerts

Enterprise Grade Security and DevOps

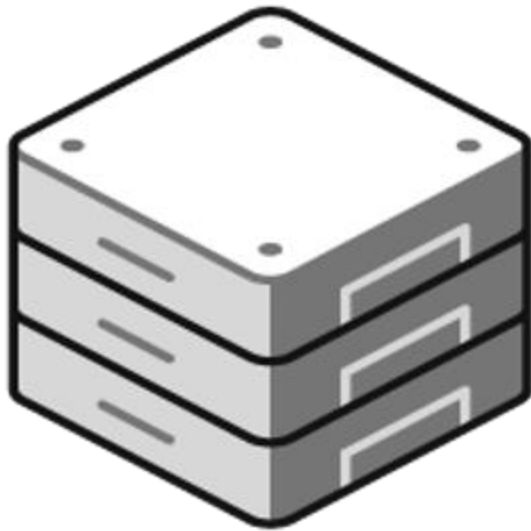
- Microsegmentation for App, VDI and ROBO
- Policy Visualization
- Remote Syslog/SIEM Integration
- ID Based Firewall
- Visualization: Search and Filter
- Default VDI Policy
- Calm Blueprint for Service Chains

Network Fabric for Hybrid Cloud

- VPC (Network Virtualization)
- Multi-tenant self-service networks
- Multiple Ext Networks
- NAT and No-NAT (Routed)
- Secondary IP

Nutanix Move

Is cross-hypervisor mobility solution to migrate VMs with minimal downtime



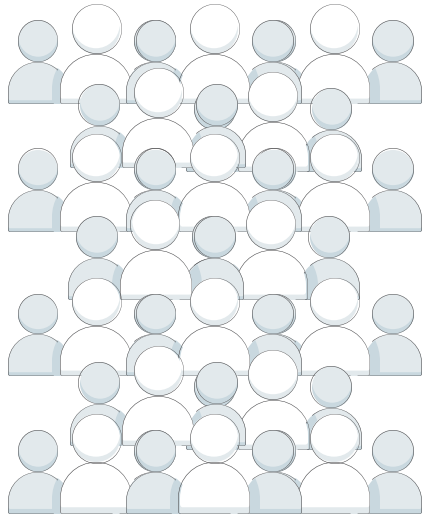
**Move
virtual appliance**



NUTANIX

Automated migrations | Almost zero downtime | Wide compatibility | Rolling Back

Move Customer Adoption



1,000s of Customers



500,000+ VM Migrations



Nutanix Cloud Platform
Acropolis Hypervisor



7+ years since launch

Migrating with Ease

Environments [+ Add Environment](#)

AOS	NC2 on AWS Prism Central 10.78.129.10	4 VMs
AOS	PHXPC Prism Central 10.19.160.10	74 VMs

In Progress 0 VMs ↗

Ready to Cutover 0 VMs

Failed 1 VMs

Paused 0 VMs

Completed 0 VMs

[+ New Migration Plan](#) Actions ▾ All Plans ▾ 1 - 2 of 2

<input type="checkbox"/>	Migration Plan Name	Source and Target	VMs	Data Size	Migrated Data Size	Elapsed Time	Status
<input type="checkbox"/>	SQL-FIN	AOS to AOS	1	100 GiB	Not Available	0m	Validating Plan
<input type="checkbox"/>	SQL2AWS	AOS to AOS	1	100 GiB	39.21 GiB	6h 49m	In Progress

All VMs Data Seeding Ready to Cutover Tested VMs Failed Completed

[Retry](#) [Discard](#) [Cutover](#) [Pause](#) [Resume](#) [Cancel](#)

1 - 1 of 1 10 rows

<input checked="" type="checkbox"/>	VM Name	Migrated Data Size	Migration Status	Details
<input checked="" type="checkbox"/>	SQL-FIN-APP VM Configurations	2.88 GiB	Ready to Cutover	Estimated Cutover Time: About 1 minute(s) Periodic Data sync in Progress. Cutover anytime

Ecosystem

NUTANIX

One Platform for Hybrid Multicloud

Nutanix Cloud Platform

Unified Storage Services

Database Services

Desktop Services

Cloud Infrastructure

Disaster Recovery

Container Services

Data + Network Security

Advanced HCI

Virtual Networking

Scale-Out Storage

AHV Hypervisor

Cloud Manager

App Lifecycle Mgmt

Security Central

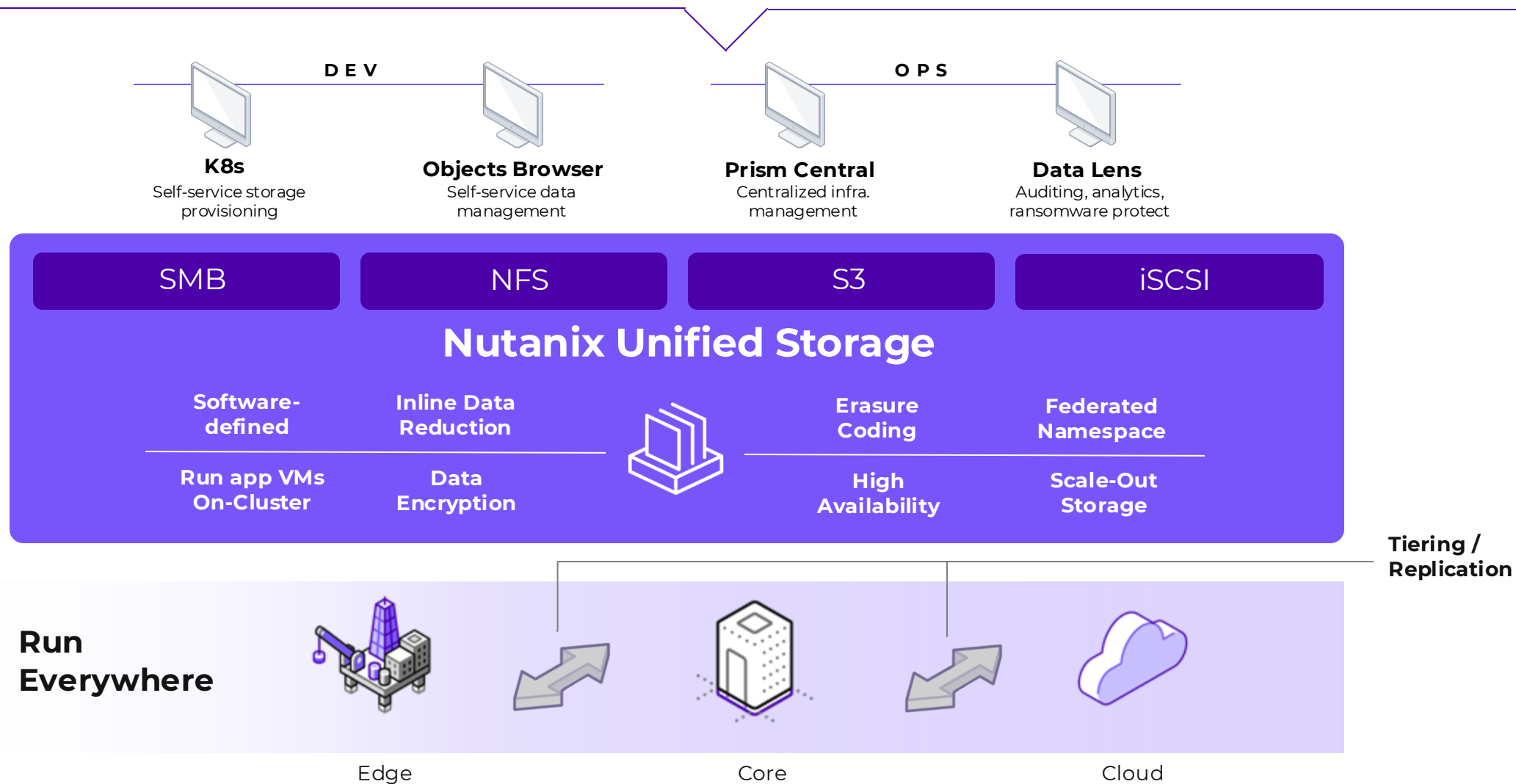
Cost Governance

Self Service Infrastructure

AI Operations

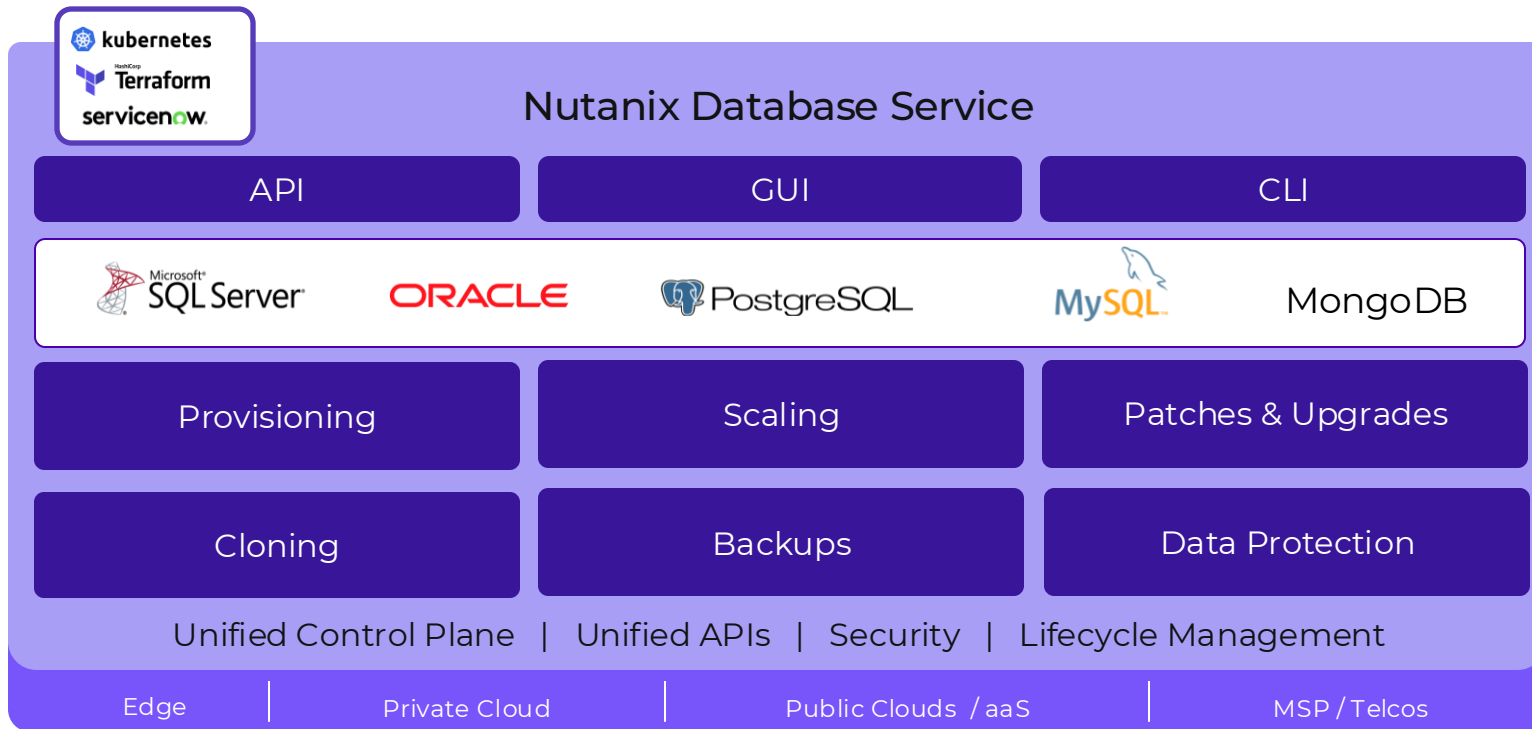
Unified Control Plane | Unified APIs | Security | Lifecycle Management

Modern SD Storage for Modern Apps



Nutanix Database Service

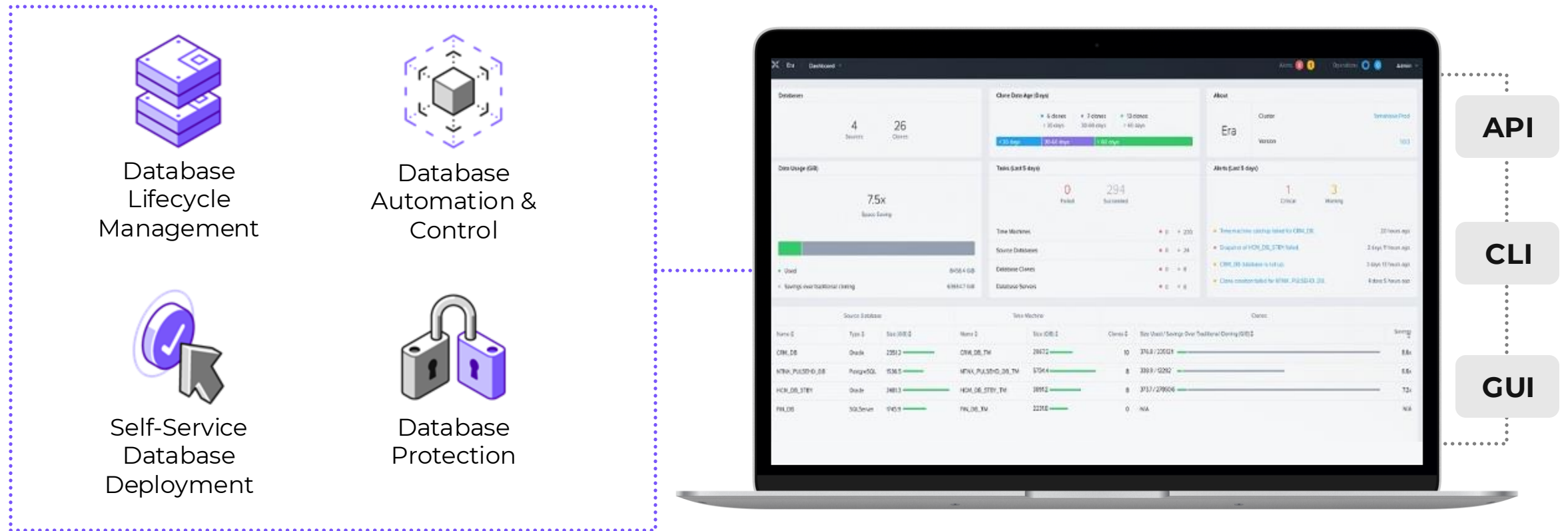
Hybrid Multicloud Database-as-a-Service for the Most Popular Databases



- Reliable, secure operations for all your databases
- Allow DBAs and IT to focus on high-value activities
- Empower developers with database self-service
- Make open-source databases enterprise-ready and cost-effective

Leverage Powerful DB Management Features

Hybrid Multicloud Database-as-a-Service for the Most Popular Databases



Nutanix Kubernetes Engine

Nutanix Kubernetes Engine



Virtualization



Unified Data Services



Hyperconverged Infrastructure

- Deploy production-ready, multi-master Kubernetes clusters in only a few clicks
- Easily configure persistent storage – Block, File types and S3.
- Scale seamlessly, without limit with a single click
- Upgrade nodes and Kubernetes versions without downtime
- Monitor, log, and get alerts - integrated best-in-class open-source tools like a Prometheus, Elasticsearch, Fluent Bit, and Kibana (EFK stack).

Ecosystem Extends Platform Reach

Data Protection

- Acronis
- arcserve®
- COHESITY
- COMMAVAULT®
- HYCU
- rubrik
- UNITRENDS
A Kaseya company
- VEEAM
- VERITAS®

Network / Security

- CISCO
- Check Point
SOFTWARE TECHNOLOGIES LTD
- CROWDSTRIKE
- FORTINET®
- f5
- JUNIPER
NETWORKS
- McAfee®
- paloalto
NETWORKS
- Symantec.
- TREND
MICRO

VDI

- citrix
- Parallels®
- NVIDIA.
- IGEL
- vmware®

Mgmt / Ops

- ANSIBLE
- bmc
- FLEXera
- PowerShell
- servicenow.
- splunk >
- Terraform

Apps / DevOps

- CLOUDERA
- NVIDIA.
- RANCHER
- Red Hat
- SAP
- suse

Verticals



Validated workloads

Data Analytics



Data Store



Data Pipeline



AI/ML



Data Sync



File Manage



Surveillance



Healthcare



Data Protection



Archive



Backup



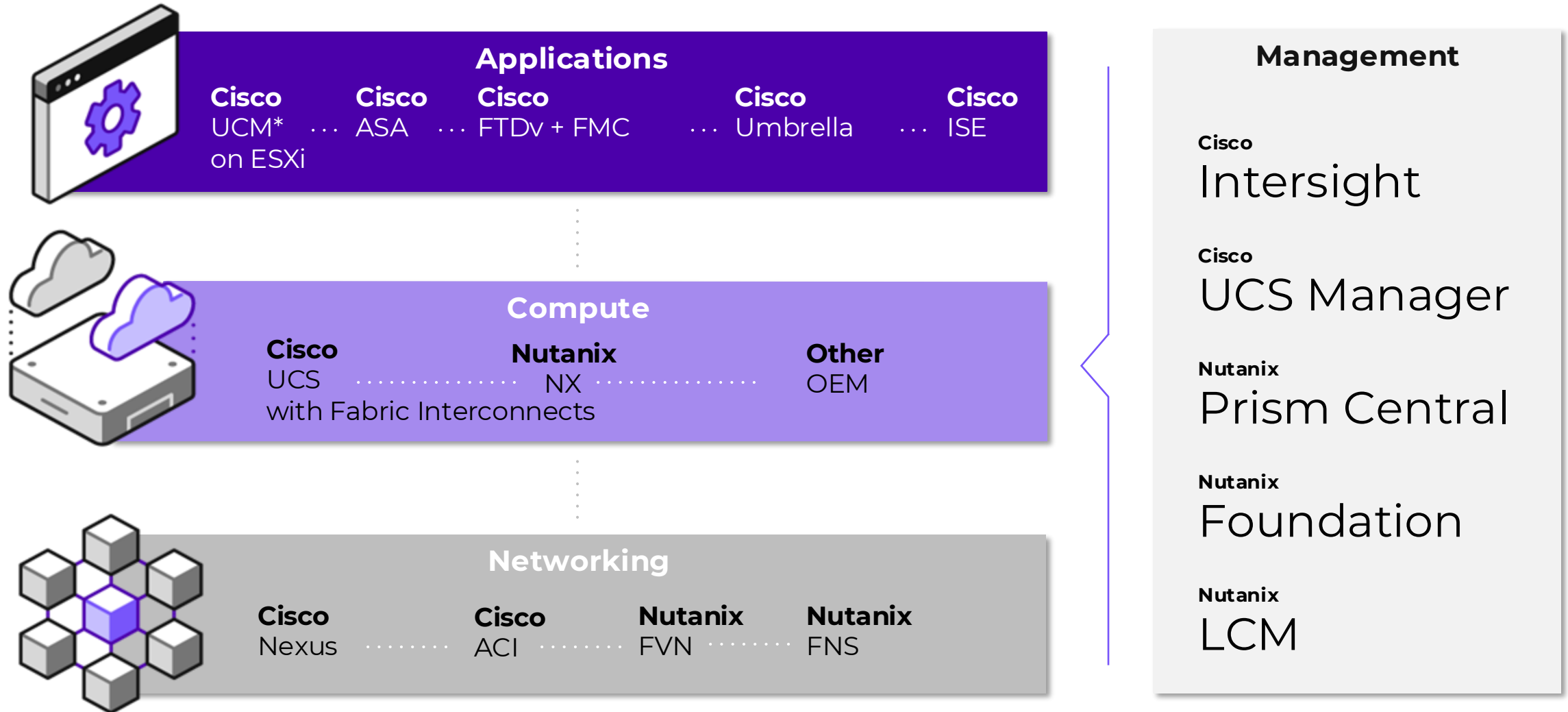
Antivirus



Cisco & Nutanix

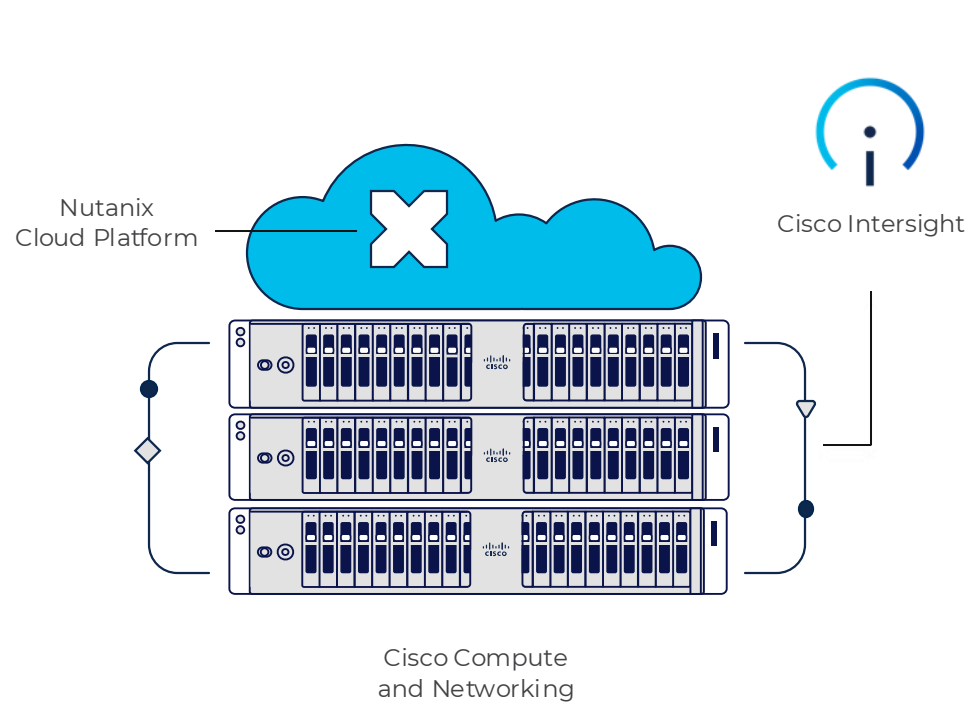
NUTANIX

Cisco and Nutanix Overview



*Cisco UCM supported on VMware ESXi only;
All other listed components are supported on Nutanix AHV

Cisco Compute Hyperconverged with Nutanix



Simplify and scale with cloud operations

Eliminate complexity with better visibility, control, and consistency across highly distributed environments



Accelerate IT transformation with more choice

Effortlessly address modern apps and use cases with flexible deployment options, latest technologies, and multicloud connectivity



Fortified hyperconverged solution

Keep systems running with augmented support, resiliency, and security capabilities

Operate
at scale

More choice and
flexibility

End-to-end
security

Comprehensive
support

Easy
to buy



Nutanix Ready

Cisco	Networking	Cisco Application Centric Infrastructure (ACI)	6.0(3)	6.5.x	AHV	20220304.342	Nutanix Ready AHV Integrated	Prism Central - pc.2022.6.0.4
Cisco	Security	Cisco Umbrella Virtual Appliance	3.5.0	6.5.2.7	AHV	20220304.392	Nutanix Ready AHV	
Cisco	Security	Cisco ISE	3.2, 3.3	6.5.2.7	AHV	20220304.392	Nutanix Ready AHV	
Cisco	Firewall	Cisco Adaptive Security Virtual Appliance (ASAv)	9.16.2	5.20.2	AHV	20201105.2229	Nutanix Ready AHV	
Cisco	Security	Cisco Umbrella Virtual Appliance	3.1.0	5.20.2	AHV	20201105.2229	Nutanix Ready AHV	
Cisco	Firewall	Cisco Secure Firewall Virtual (FTD)	7.0.0 +	5.20	AHV	20201105.2030	Nutanix Ready AHV	



Use-cases & Customer's Stories

Powering the World's Leading Brands Since 2009



Business Needs

- Needed more storage capacity and better performance for all grocery line of business apps.

Solution

- Nutanix Enterprise Cloud built on AOS
- Nutanix AHV Virtualization
- Applications: Microsoft Exchange, accounting software, catering application, point-of-sale system, data file sharing, print servers, domain controllers, several grocery line-of-business applications

Benefits

- Obtained Nutanix hyperconverged solution at a 25% to 40% lower price than traditional, three-tier options.
- Simplified storage management and increased system performance.
- Improved disaster recovery and business continuity.
- Eliminated the high cost of VMware vSphere licensing.



“

It was much more cost-efficient to go with Nutanix. Not only did it provide higher performance, the hyperconverged solution was 25–40% less expensive than the three-tier storage, server, and VMware vSphere solution.

IT Manager

Business Needs

- A complete re-think of the Largest Payment Provider's IT infrastructure was clearly required with an emphasis on scalability, performance, and ease of management, albeit with the added complication of having to meet the stringent security requirements of PCI compliance.

Solution

- Nutanix Cloud Infrastructure
- Flow Virtual Networking
- AHV
- Self-Service

Benefits

- Significant step up in performance across all customer services
- Much reduced payment processing times due to latency storage improving database performance
- Full control of infrastructure from one-pane-of-glass to handle complex tasks with a few clicks
- The team has also used the tools in the Enterprise Cloud stack to build self-service portals



“

Nutanix just ticked all the boxes and has made a huge difference to our ability to do business. VMs that used to take weeks to provision can now be brought online in minutes and workloads sized on-demand as customer requirements change. We can also see and manage the whole infrastructure ourselves plus it's all fully backed up, secure and PCI compliant.

Lead Systems Engineer

Business Needs

- Replacement of the legacy 3-tier server & storage hardware
- Solution that would deliver linear scalability to handle predicted rapid growth in container traffic
- Greater resiliency and the ability to upgrade and manage the infrastructure without any downtime or impact

Solution

- Nutanix Enterprise Cloud built on AOS
- Microsoft AHV
- Nutanix MOVE
- Applications: Oracle DBs, Sybase

Benefits

- Simplifies IT management, freeing up time for strategic tasks
- Minimizes possible disruption to operations
- Boosts sustainability, reducing hardware



“

With zero downtime even during major capacity upgrades, migration to Nutanix Enterprise Cloud has revolutionized our IT infrastructure, making it quicker, more reliable and much easier to both scale and manage.

Infrastructure Specialist

Business Needs

- Taking too long to clone database for developers to support application development
- New reporting server and development data lab environment with up-to-date data cloned from production
- Reduce database-related storage requirements and costs

Solution

- Nutanix Database Service
- Nutanix Cloud Infrastructure

Benefits

- Reduced database provision time and increased database performance
- Realized \$37,000 savings by reducing storage requirements by 10TB
- Increased data load times by 5x to just 8hrs
- Ability to test data loads in minutes (allow for multiple loads in a day)



“

With Nutanix Database Service, we're able to make a clone of the environment and attach the clone to another server, allowing us to create a data lab environment for developers. When we've finished with the end product, it was less than a terabyte of space. So huge savings, space-wise for the to the business.

NUTANIX.

THANK YOU