Why choose Nutanix NCI for the main platform

Roman Kalchenko

NUTANIX

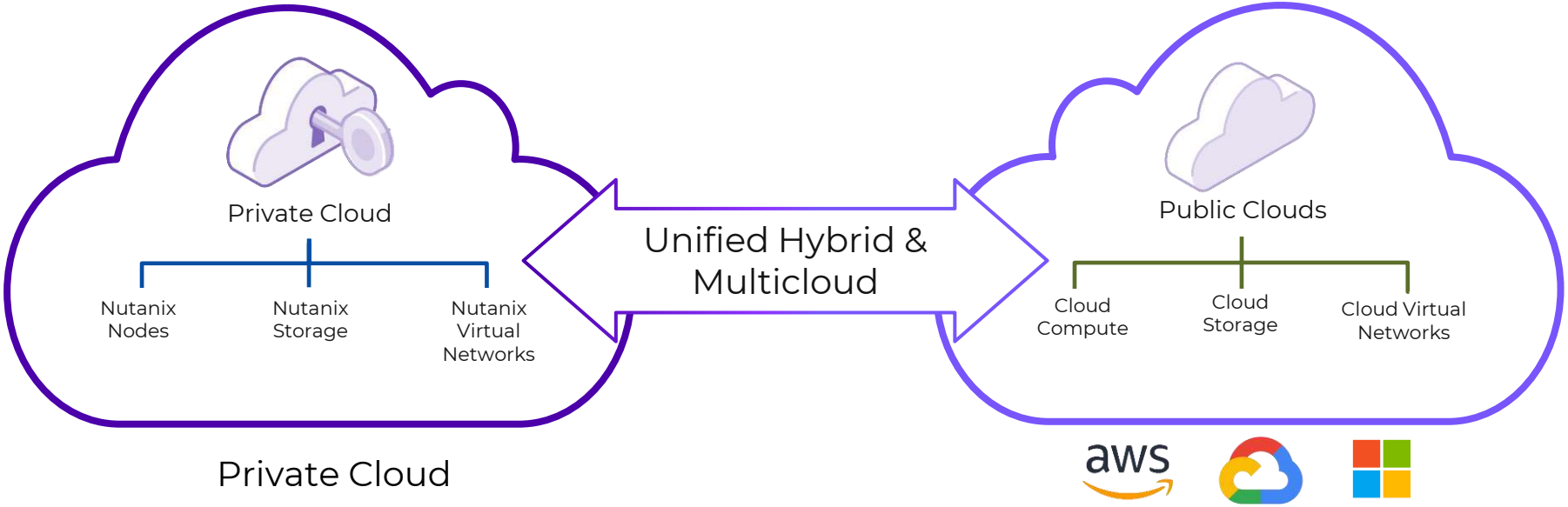
1. Today’s IT challenges
2. Nutanix is the way
3. Nutanix ecosystem
4. How to migrate
5. On the Edge of New Frontier

Today’s IT challenges

NUTANIX

Where Are We Today?

Ideal state is Hybrid Multicloud…



Private Cloud

Predictable Cost | High Performance

Greater Control | Data Sovereignty

Elasticity | Many Services

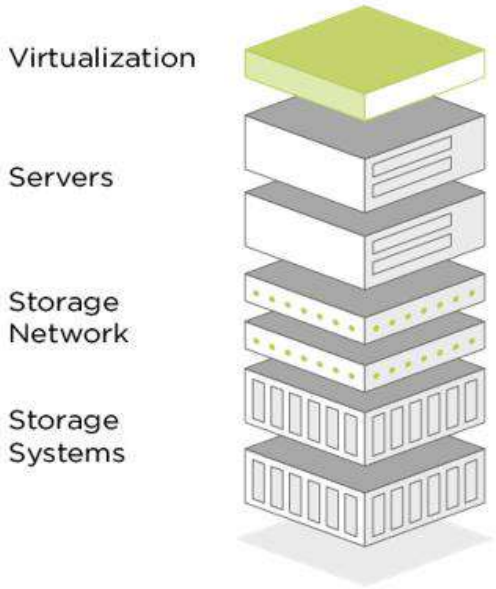
Ease of Use | Fractional Economics

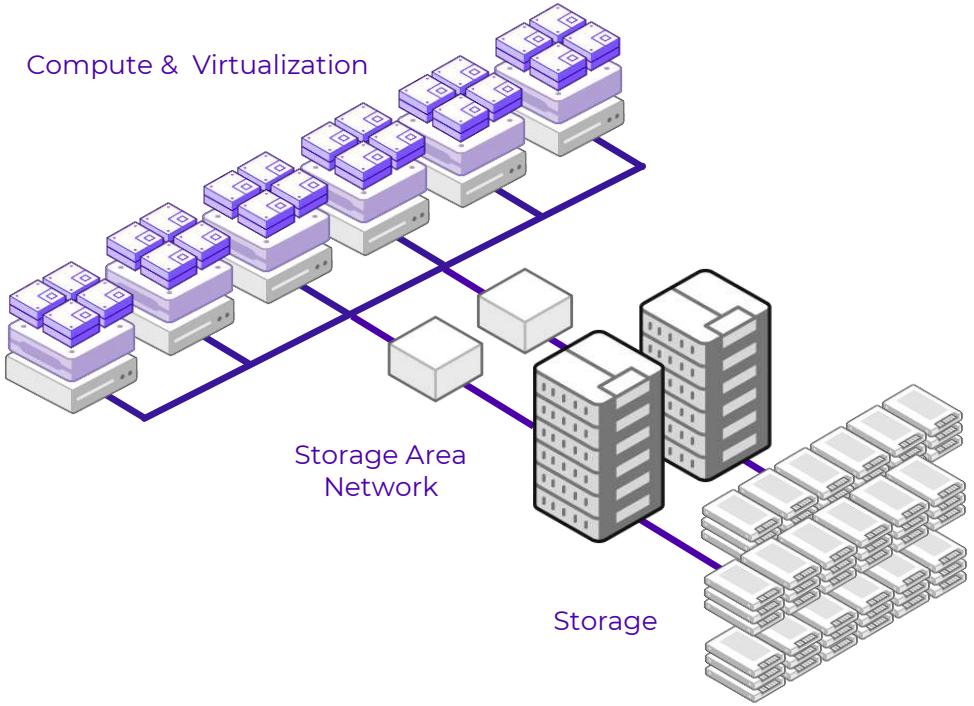
Gartner’s Vision - Distributed Hybrid Infrastructure

Leaderboard

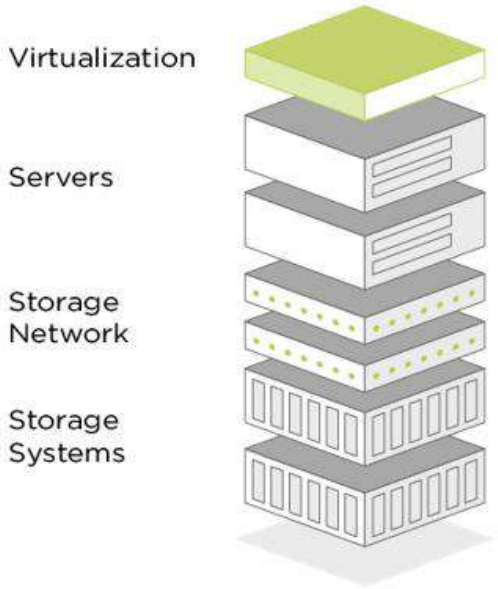
- AWS
- Microsoft Azure
- Oracle
- Nutanix
- Broadcom (VMware)

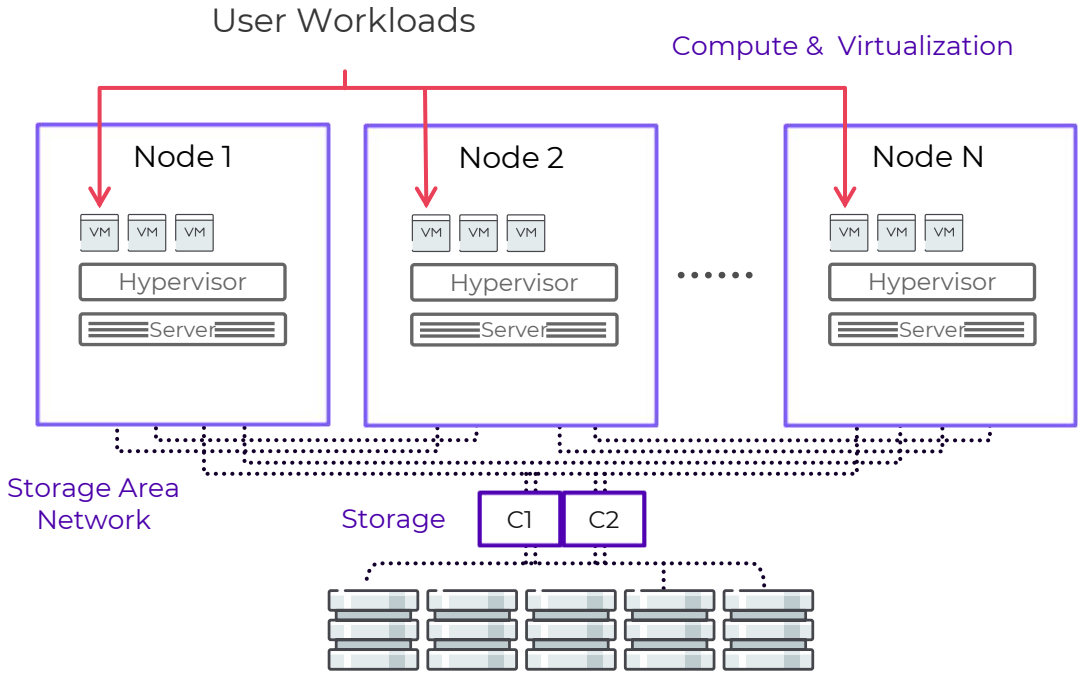
Typical Enterprise infrastructure



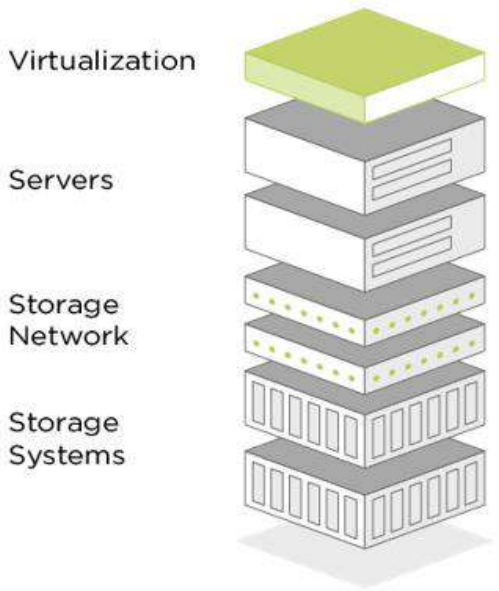


Typical Enterprise infrastructure





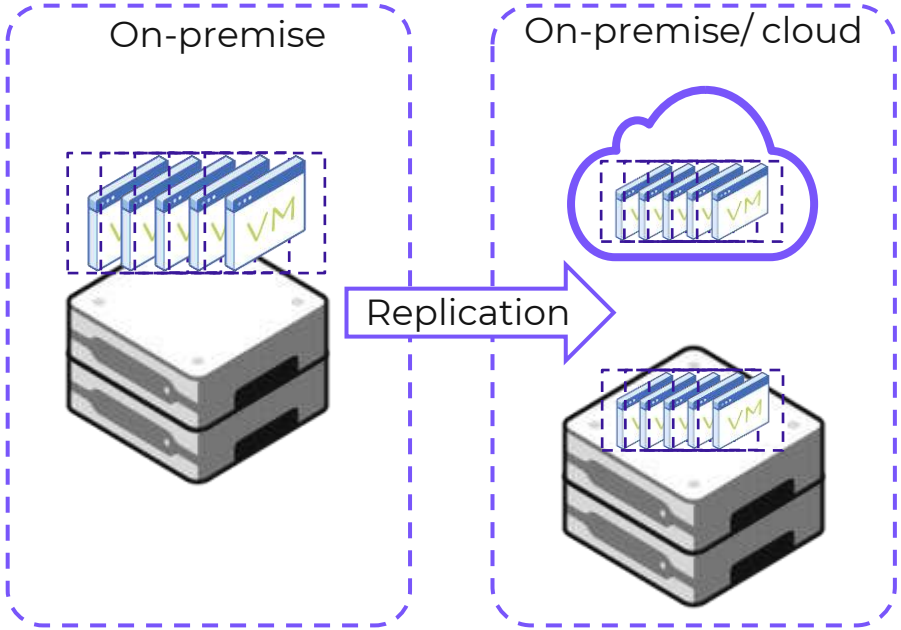
Key disadvantages of classic 3-tier architecture



- Different-Disparate components;
- Various management interfaces (virtualization, storage, SAN, server management, etc.);
- Compatibility of the components with each other (protocols, firmware, etc.);
- A complex and takes a lot of time process of updating the software and firmware (checking dependencies, etc.);
- Storage failure tolerance (most systems with two controllers);
- Storage - proprietary hardware with specific components;
- No load balancing between storage controllers;
- Highly specialized engineers is required

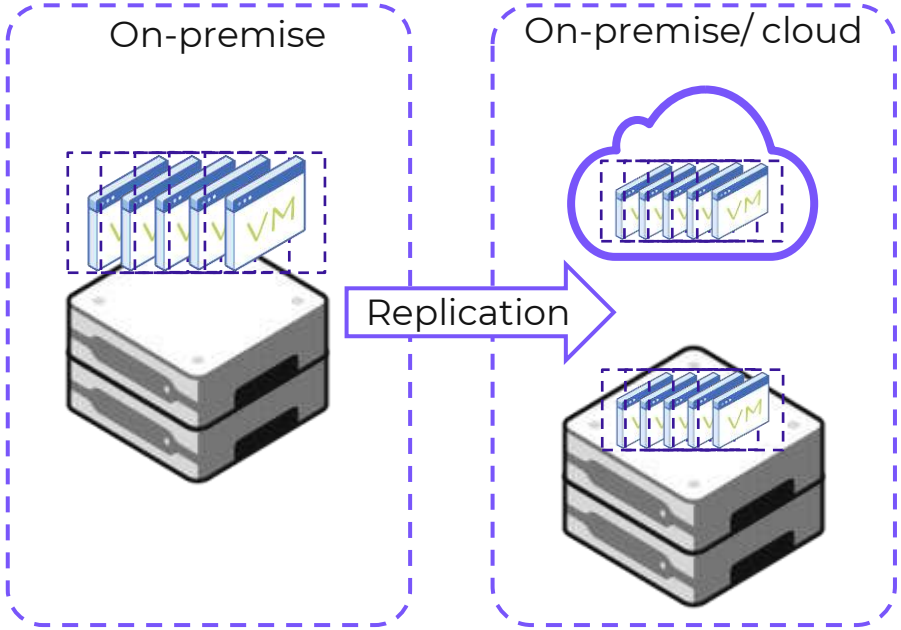
Disaster Recovery - Scenarios

- On-premise to On-Premise
- On-premise to Cloud Provider



Disaster Recovery – How to

- Storage based replication
- Build-in hypervisor replication
- Application-level replication
- 3RD party tools

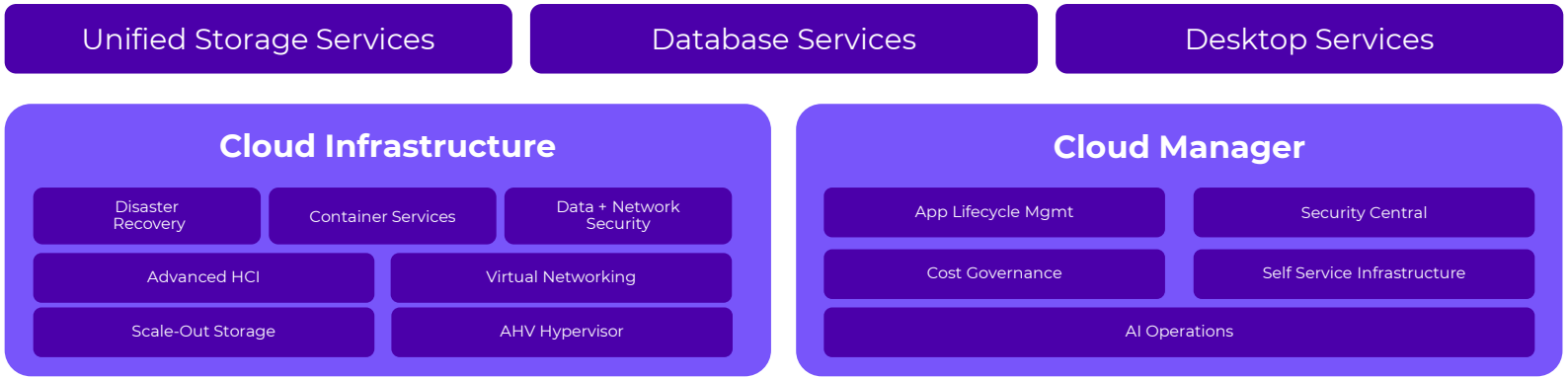


Nutanix

NUTANIX

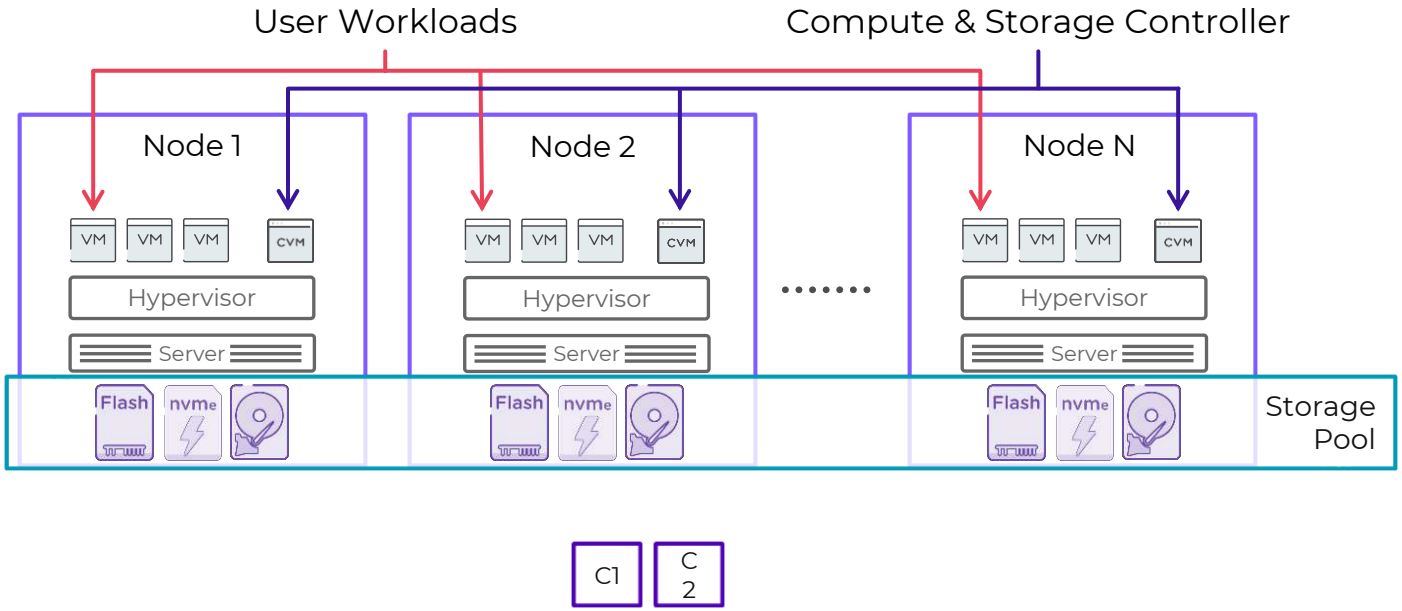
One Platform for Hybrid Multicloud

Nutanix Cloud Platform



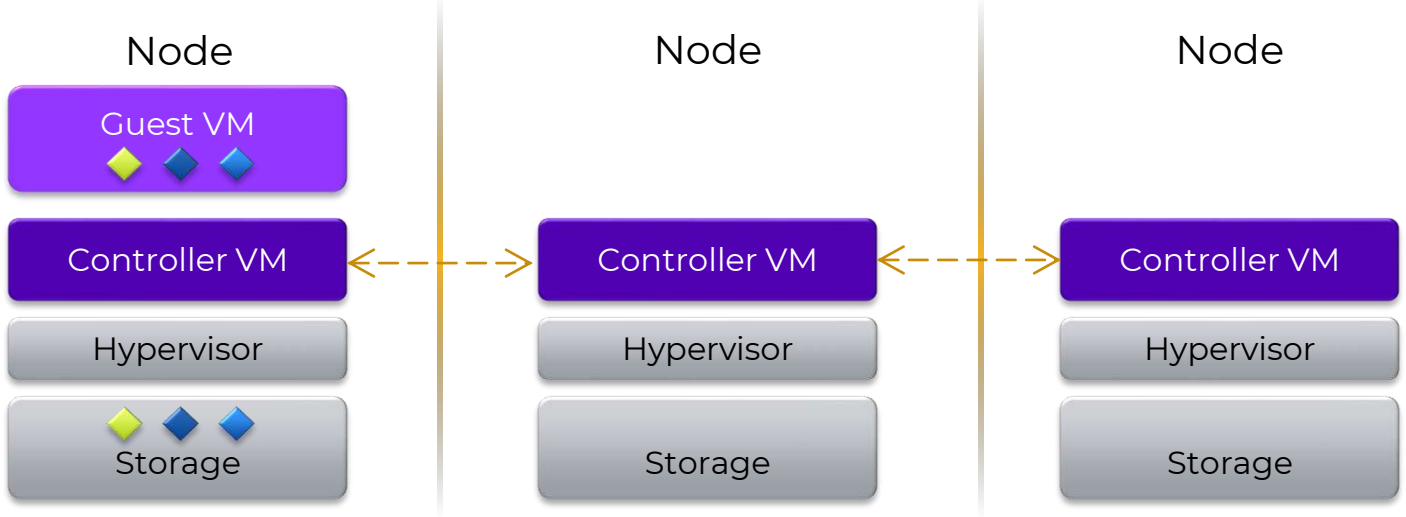
Unified Control Plane | Unified APIs | Security | Lifecycle Management

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

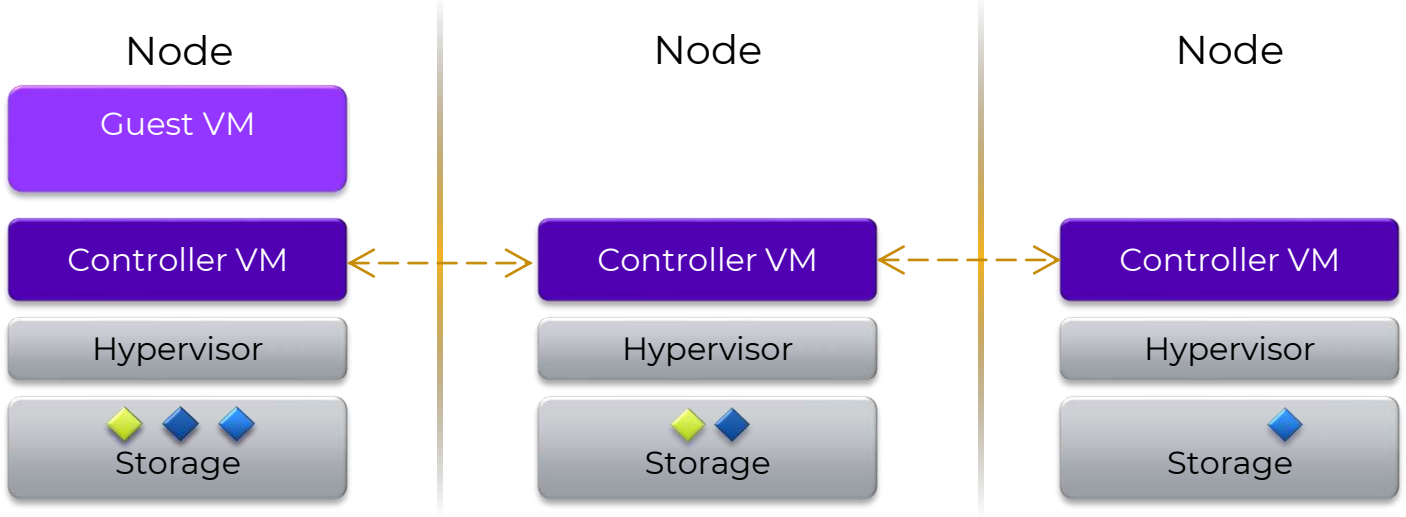
Anatomy of a Write I/O



Performance and availability

- Data is written locally
- Replicated on other nodes for high availability
- Replicas are spread across cluster for high performance

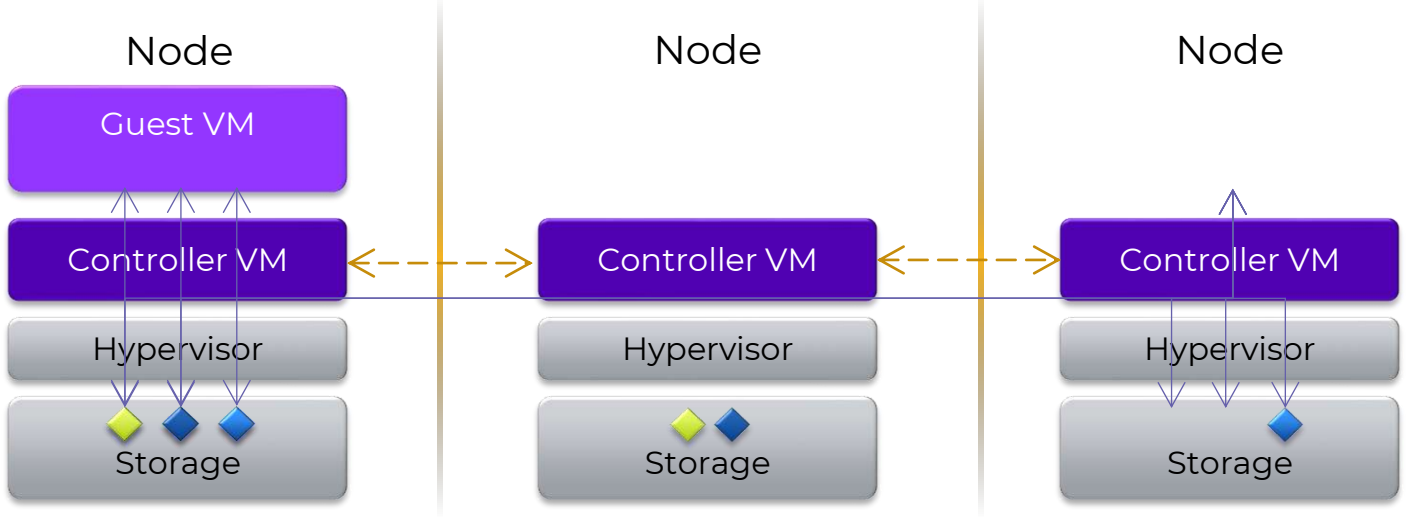
Anatomy of a Read I/O



Performance and Availability

- Data is read locally ***i.e. Data Locality***
- Remote access only if data is not locally present

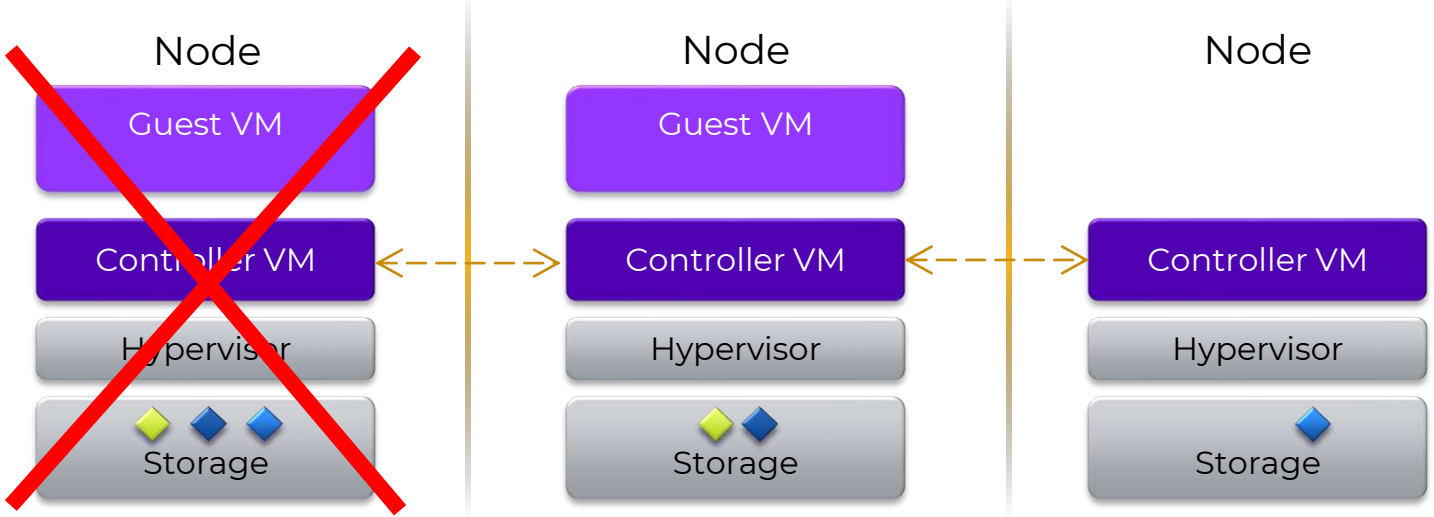
vMotion/DRS or Live Migration



Seamless VM Migration

- Metadata service can access data from anywhere
- As data is accessed it is stored locally
- Locality improves over time

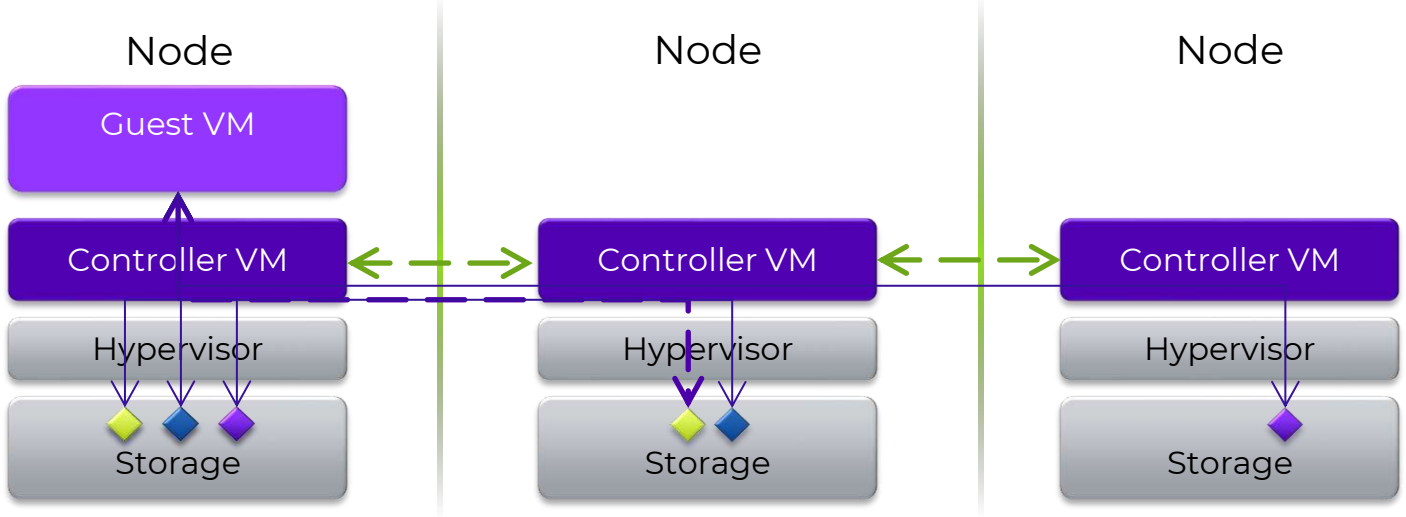
HA Event



Performance and Availability

- VM restarts on another host
- Self-healing starts immediately (other HCI solutions wait an hour)

CVM Down / Unavailable



What is it

- CVM down != Node Down
- Hypervisor routing is updated automatically to use another CVM

Benefits

- High availability during software upgrades and failures

AHV Unlocks the Hybrid Cloud

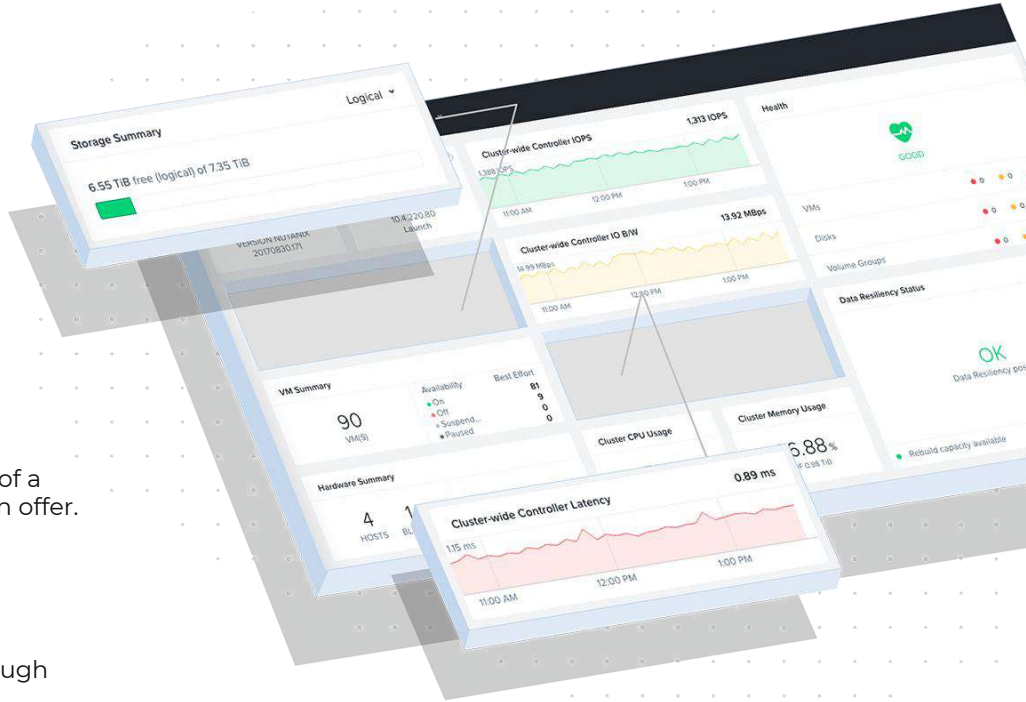
AHV

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.

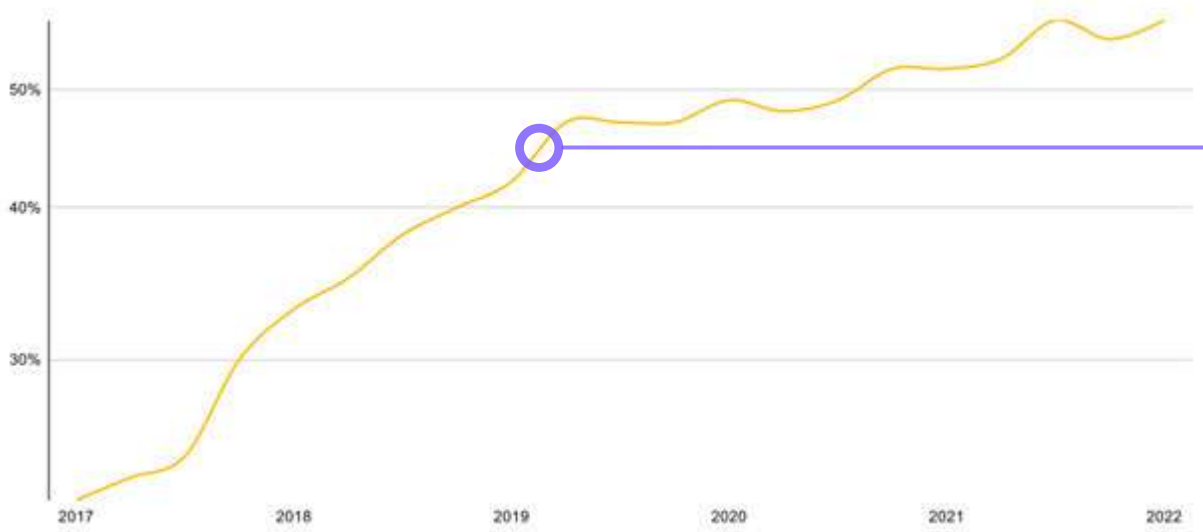


AHV Adoption Growth

Continuous Enterprise Value Delivery

78%

Adoption

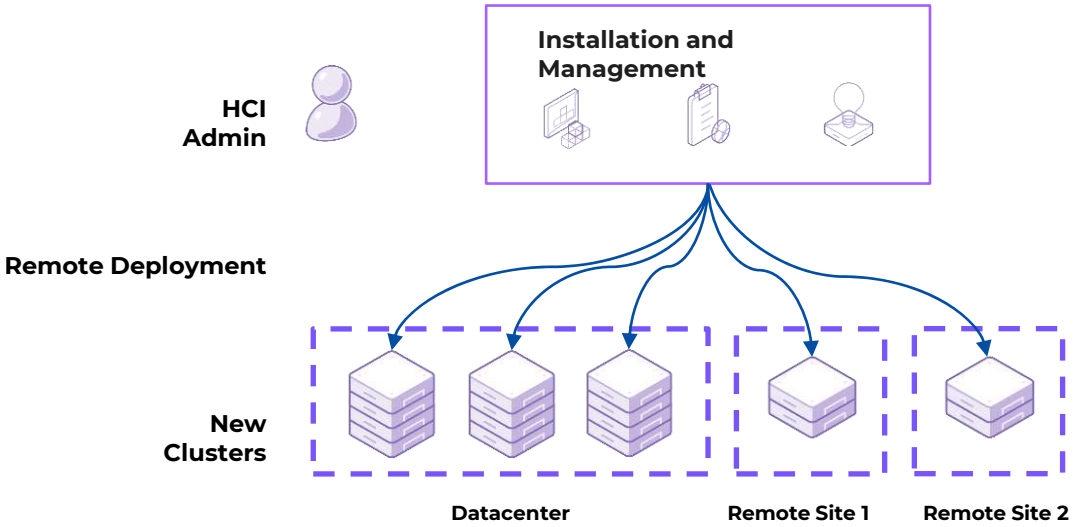


AHV Crossover Point

AHV adoption exceeds ESXi adoption on Nutanix

Turbo SCSI Data Path
CPU, Memory Hot Plug
NVIDIA vGPU
RBAC Control UI
NGT Bulk Operations
SAP HANA Support
NIC Bonding, Disconnect
Auditing & Syslog
UEFI, Secure Boot, Cred. Guard
AMD CPU Support
Synchronous Replication
Cross-Cluster Migration
Virtual Switches, VPCs
Cluster-Scope RBAC
AHV Metro Configuration
Image Replication Throttling
Memory Overcommit
Manual Maintenance Mode
vCPU Breadth-First Scheduling
vTPM & Windows 11 Support
NGT IP-Less & Package installers
Generation ID Support
On-demand cross cluster live migrate

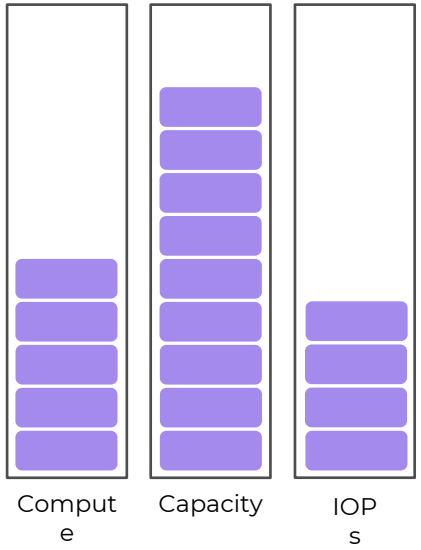
Simple, Fast Deployments

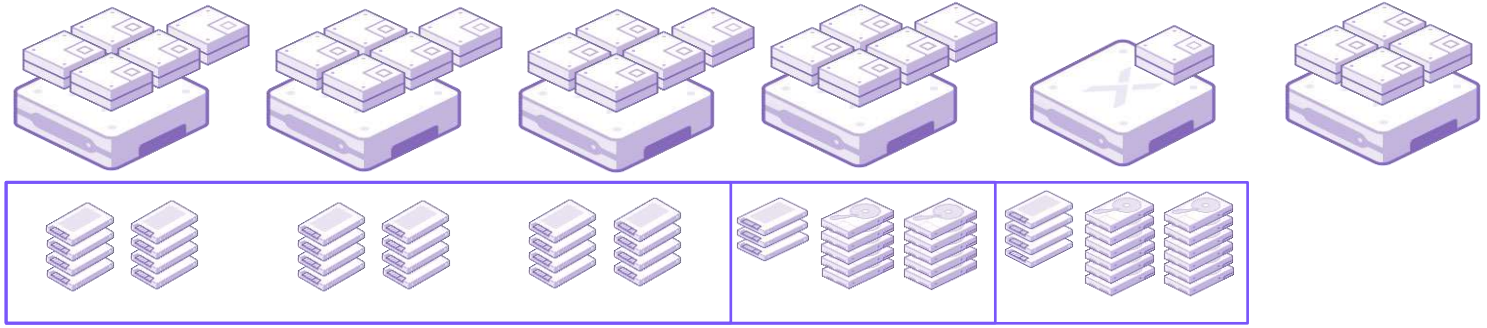


- Complete install in less than 1 hour
- Single installer for all deployments
- Image multiple clusters, across sites
- Deploy Hypervisor + AOS

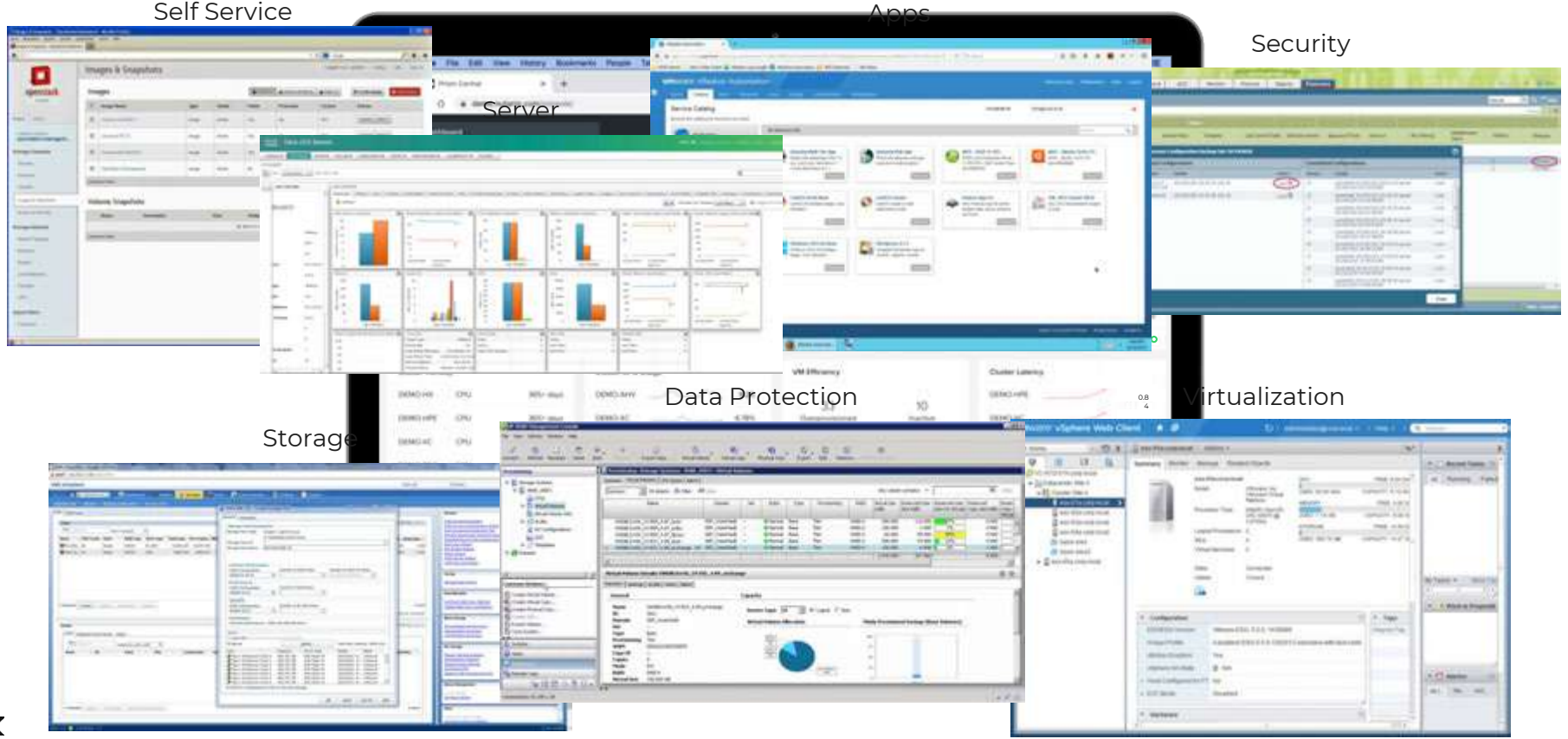
Flexible Scaling with Nutanix HCI

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

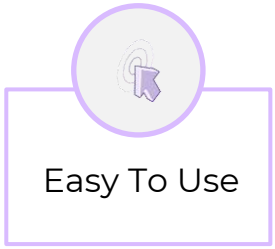


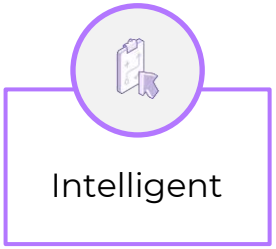


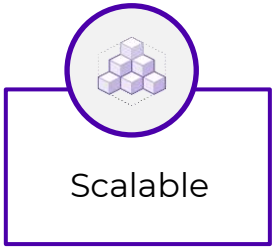
Unified Management



Simplified Maintenance and Upgrades







Software → Firmware Full Stack Upgrades

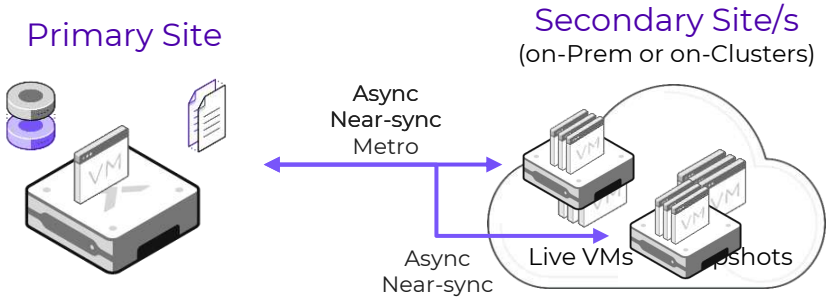
Automatic Dependency Management

Unified Upgrade Process

NUTANIX
DELL EMC
CISCO
Lenovo
FUJITSU
Hewlett Packard Enterprise

Disaster Recovery

Integrated
1-Click Disaster
Recovery



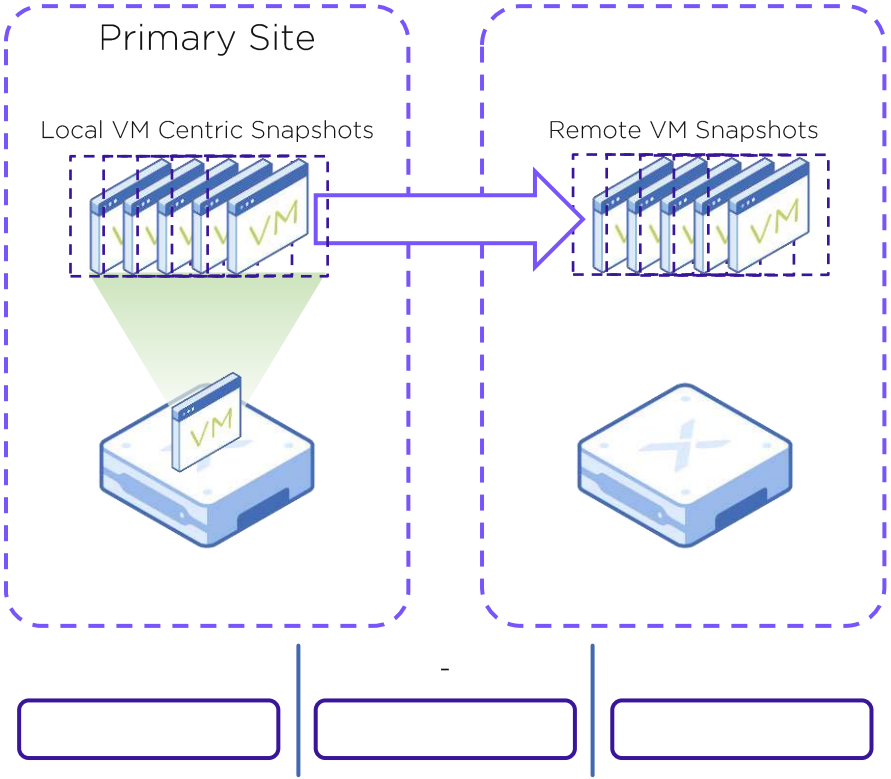
- 1-click failover, failback and test
- Automatically orchestrate recovery plans
- Multi-Site Replication

One User Interface for Management & Operations

Integrated
Best-in-Class
Backup

- Backup and archive data
- Use popular data protection software

Nutanix Local and Remote Snapshots



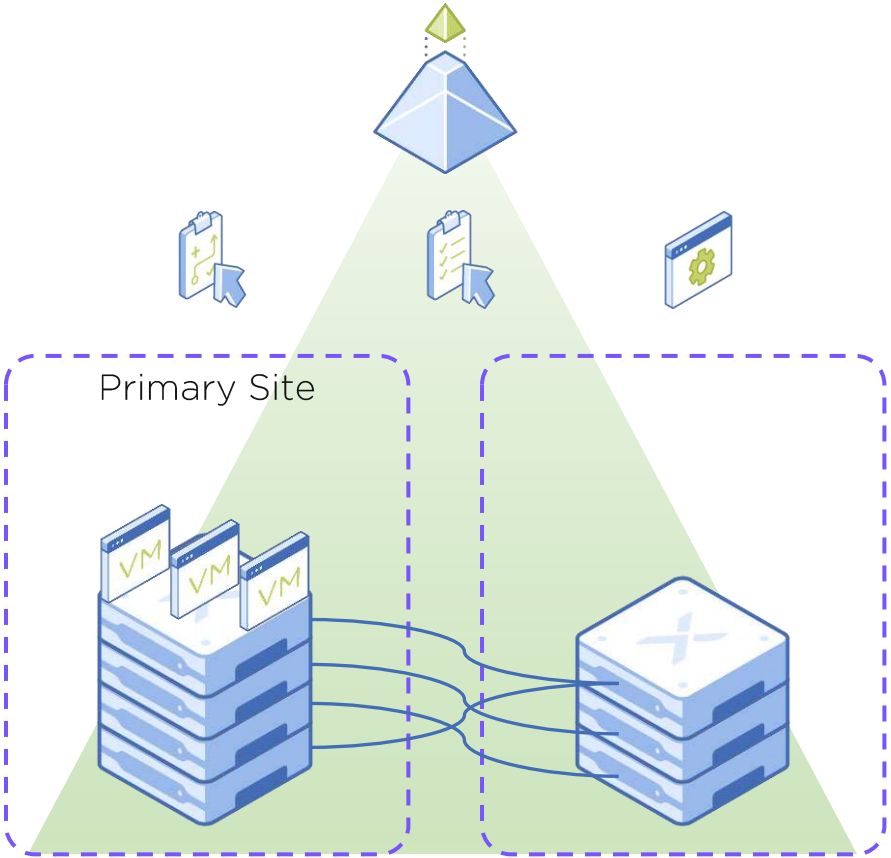
HIGHLIGHTS

- Create unlimited local VM snapshots
- Policy-based snapshot management
- App- and Crash- consistent policies
- Support multiple hypervisors
- **Support replication across hypervisors**

BENEFITS

- Self-service file restore
- No performance impact through redirect on write
- Efficient storage utilization
- **Reduced virtualization licensing costs**

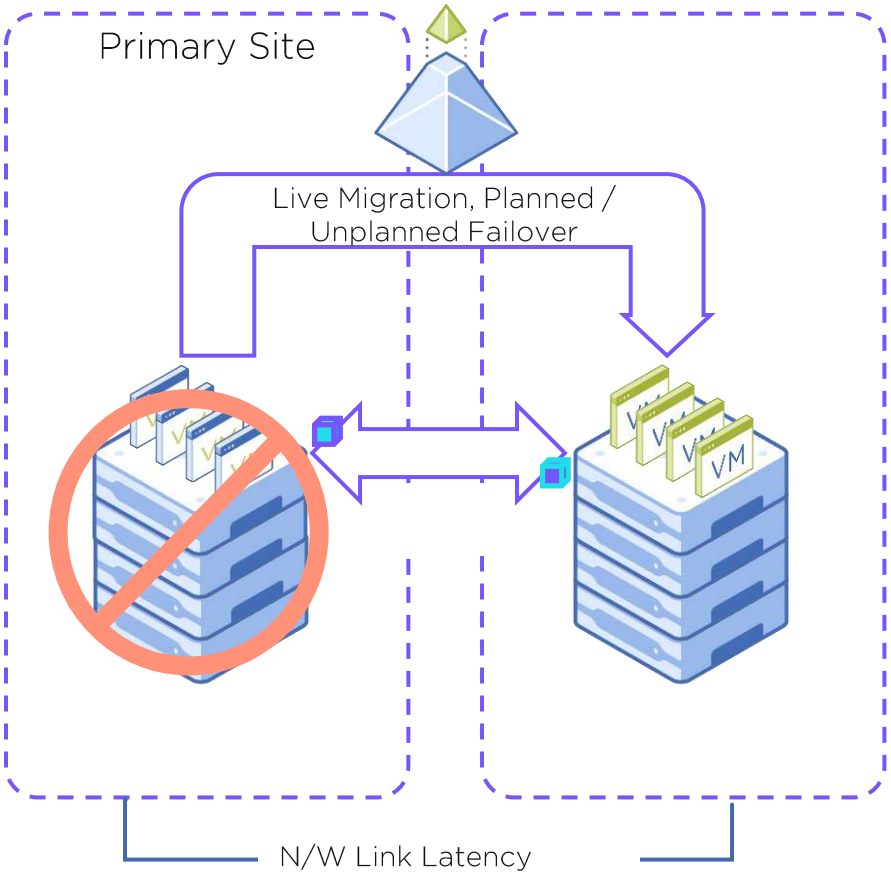
Disaster Recovery Orchestration



- 1-Click Failover, Failback, and Testing
- Auto-protect Applications using Nutanix Categories and Protection Policies
- Orchestrate Recovery Plans (runbooks)
- Restore apps selectively or site-wide
- Unified consumer grade interface through Prism
- Recover from the latest recovery point or a previous point in time

- Reduce risk with an easy-to-use policy-based approach to DR
- Recover from a disaster immediately or days after a ransomware attack

AHV Metro Availability and Synchronous Replication

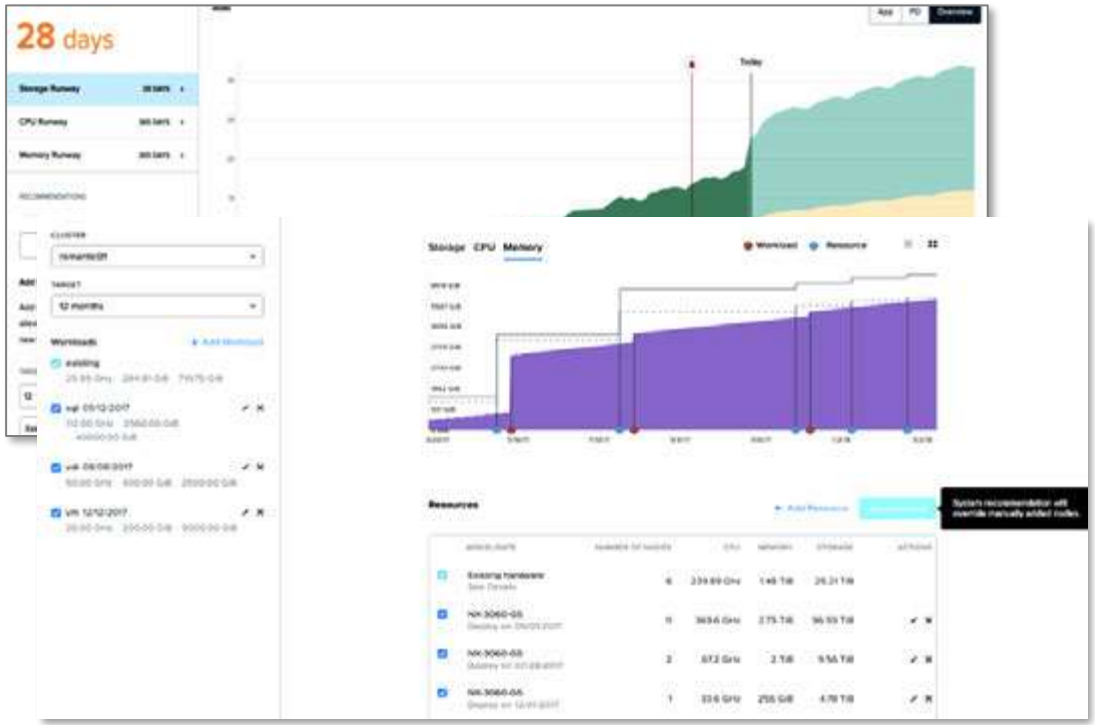


- Policy-based for predictable outcomes
- Protect mission-critical applications against complete site failure
- Support for bi-directional synchronous replication and failover.
- Zero Touch automated witness-based failover.

- Easy to setup and manage which removes the burden of specialized personnel and equipment.
- 0 RPO and near 0 RTO using synchronous replication and the witness capability which provides the highest level of availability for the business
- 1-Click live migration of VM's between sites allows greater flexibility for tasks like DC maintenance or Disaster Avoidance
- REST-API Driven allowing our workflows to be included as a part of a larger DR runbook.

How to Plan and do JIT Forecasting

Keep resources used efficiently



What is it?

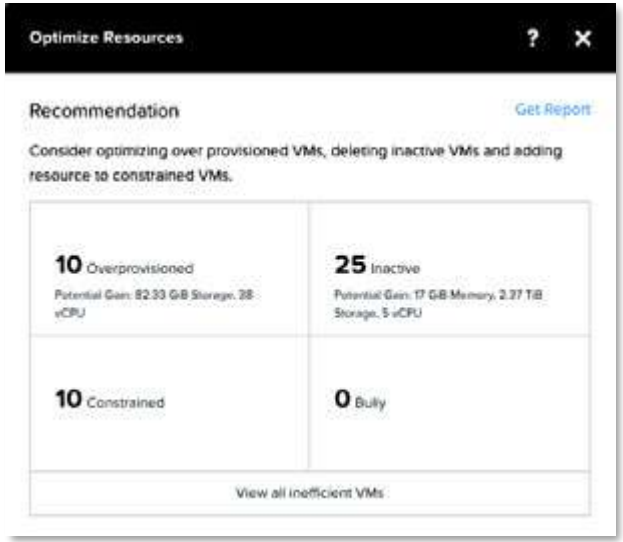
- Detailed capacity forecast
- Scenario-based analysis
- One-click recommendation for just-in-time expansion
- Ready-to-present PDF report
- Powered by X-FIT machine learning engine

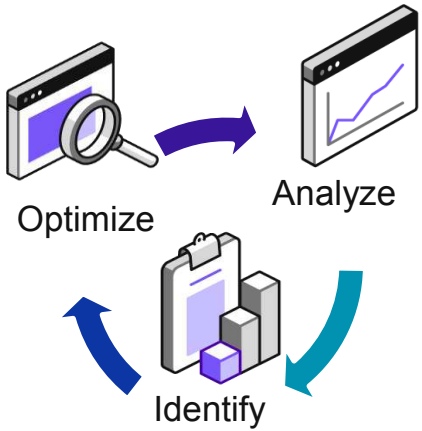
Benefits:

- 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





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

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

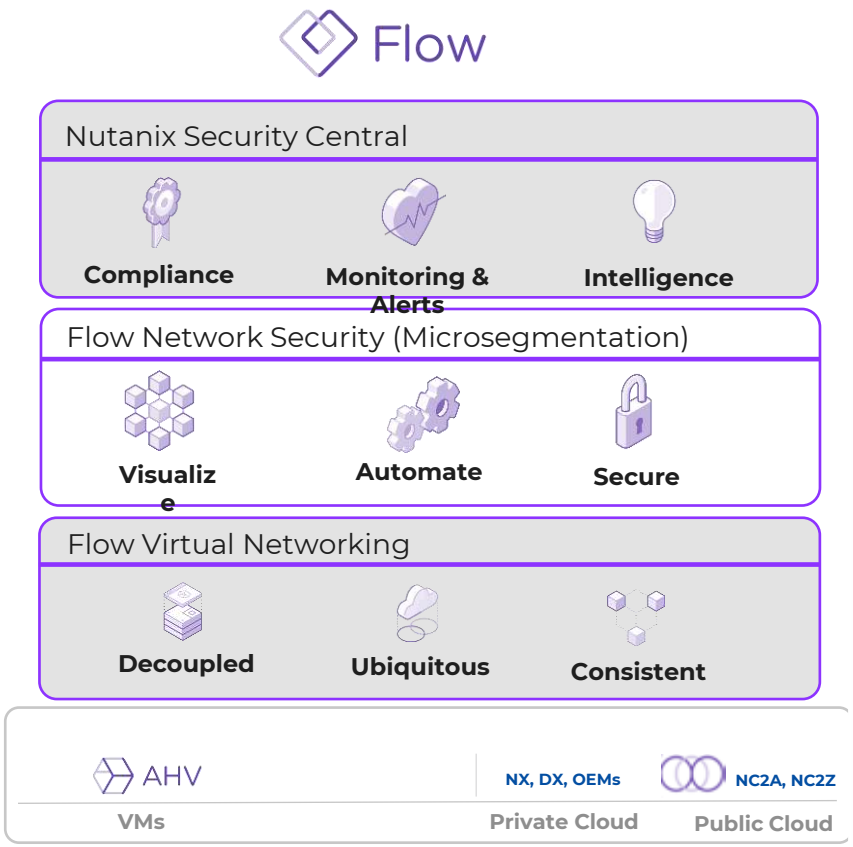
Data Protection

- 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

Flow is now Flow Network Security



Ease of Security Operations

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

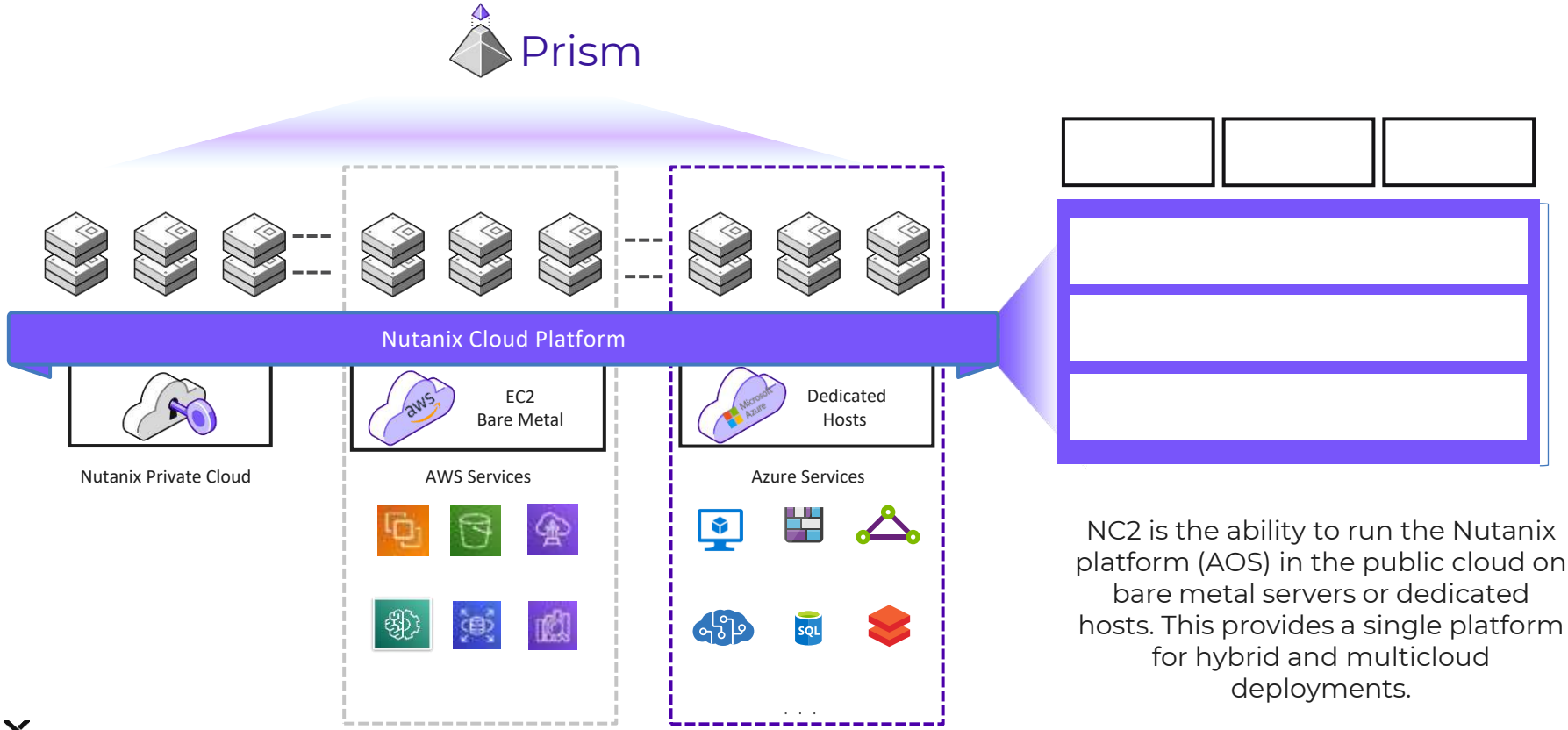
Enterprise Grade Security and DevOps

- 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

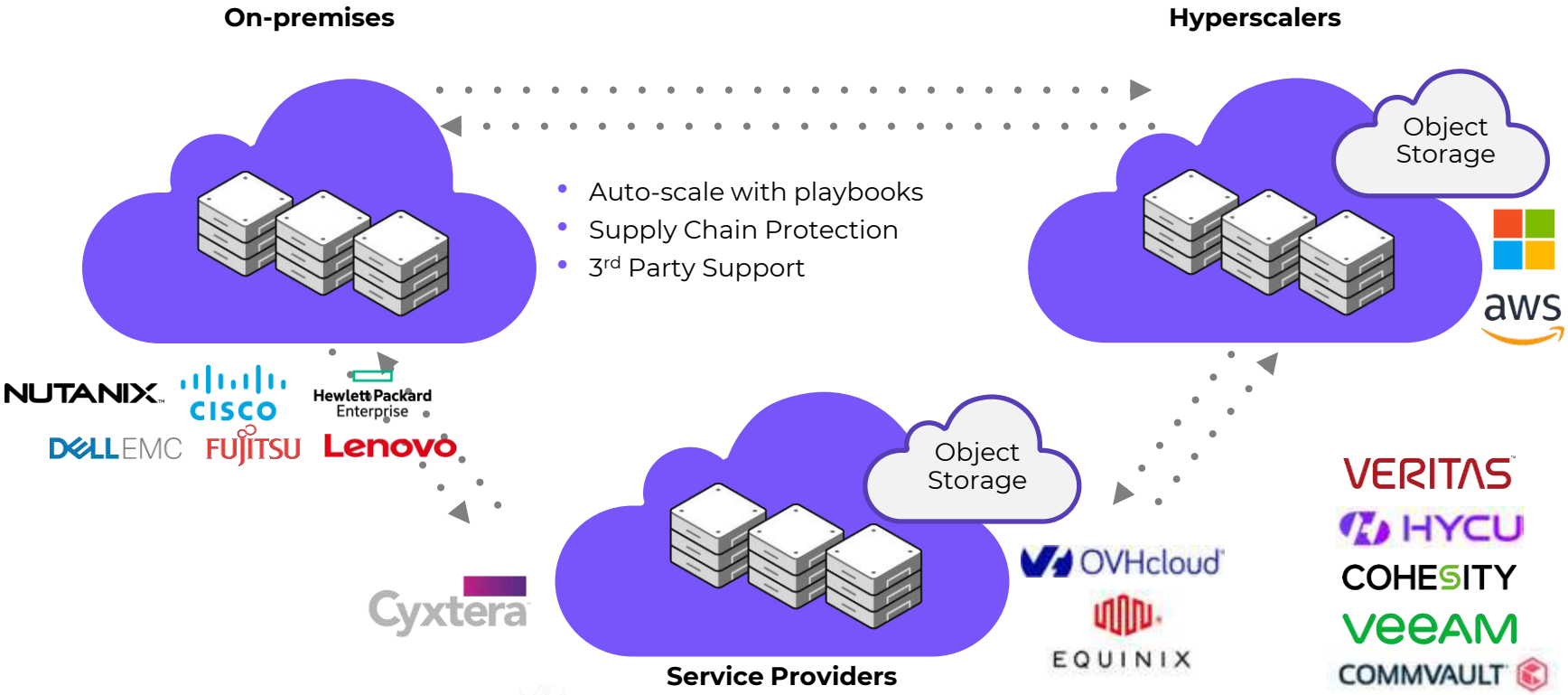
- VPC (Network Virtualization)
- Multi-tenant self-service networks
- Multiple Ext Networks
- NAT and No-NAT (Routed)
- Secondary IP

Nutanix Cloud Clusters (NC2)



NC2 is the ability to run the Nutanix platform (AOS) in the public cloud on bare metal servers or dedicated hosts. This provides a single platform for hybrid and multicloud deployments.

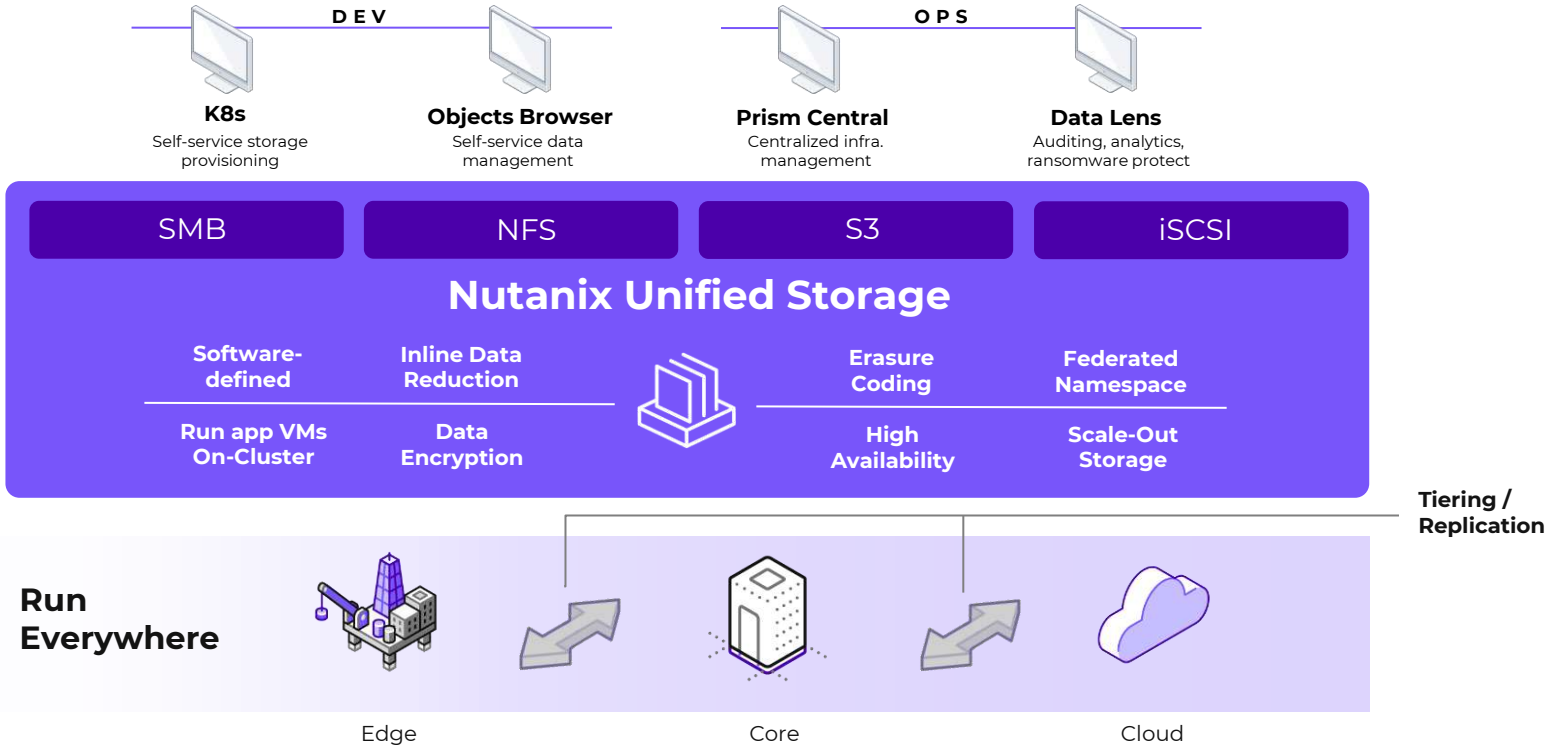
Elastic DR/Migration Ease the Burden



Ecosystem

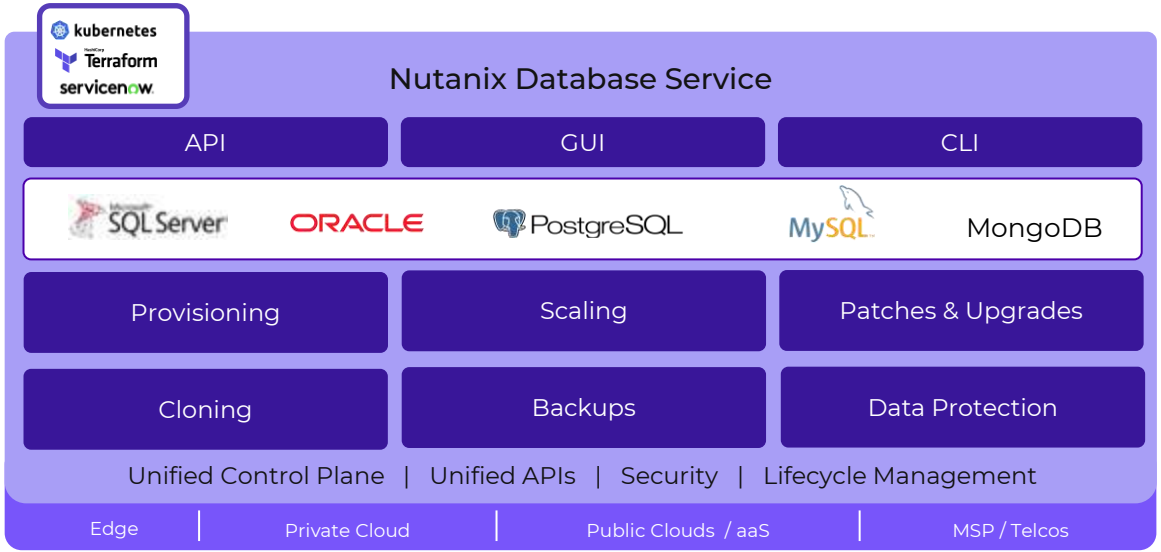
NUTANIX

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

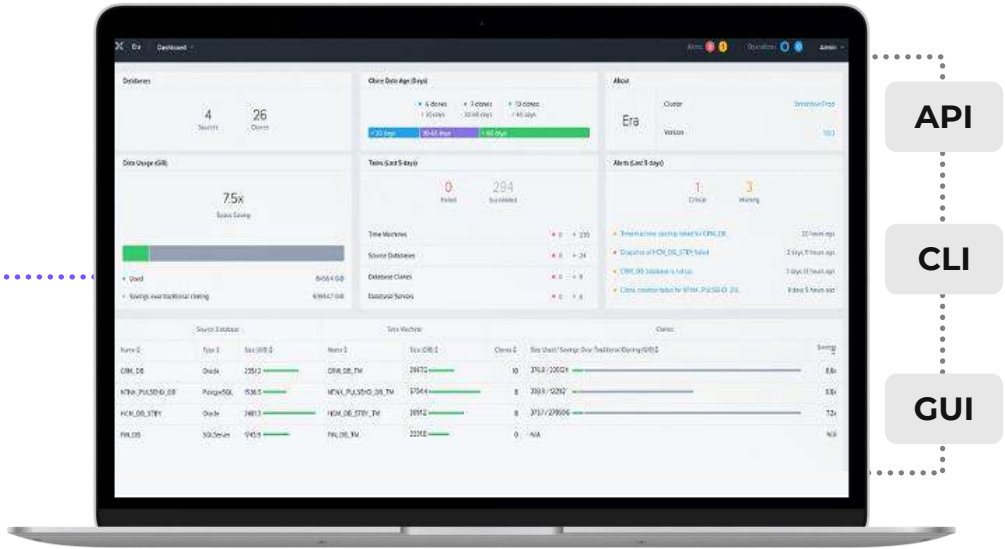
Hybrid Multicloud Database-as-a-Service for the Most Popular Databases

Database Lifecycle Management

Database Automation & Control

Self-Service Database Deployment

Database Protection



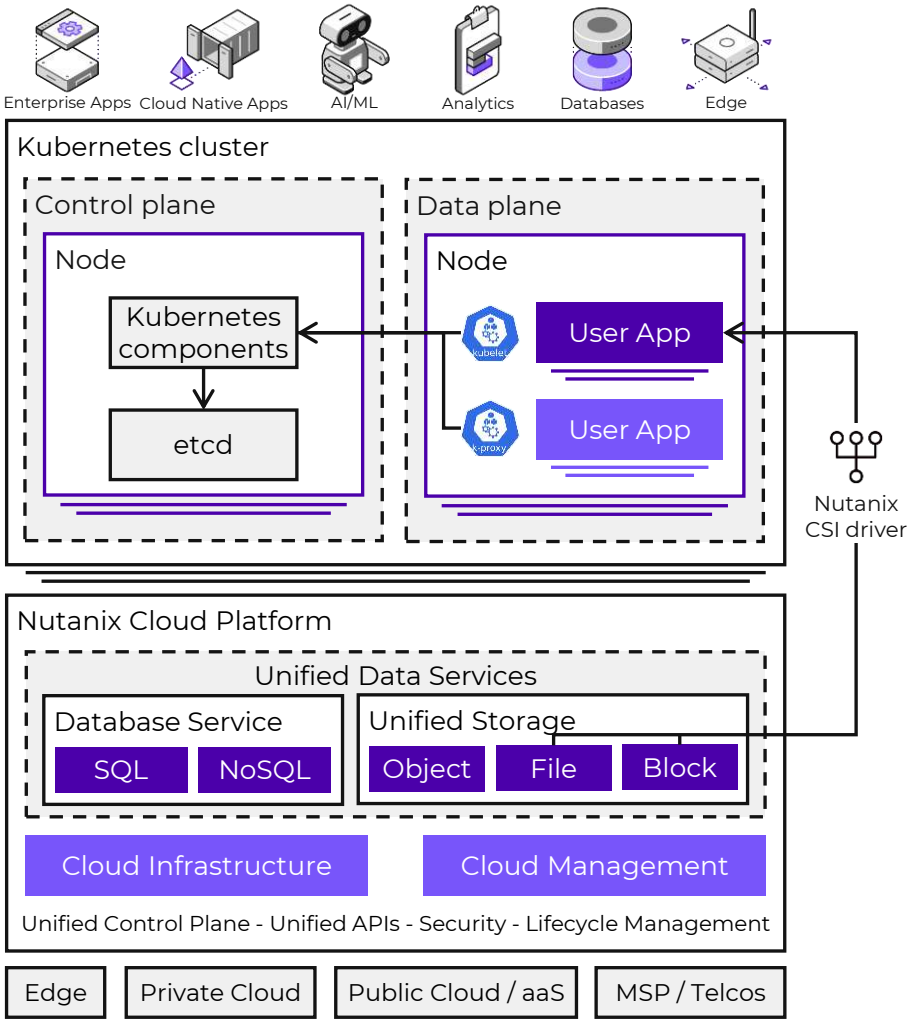
Nutanix for Kubernetes

HCI

- Web-scale architecture coupled with automation substantially reduces time to deliver
- Self-healing architecture means 86% less unplanned outages
- Management simplicity makes infrastructure invisible

Unified Data Services

- The rich cloud native data services needed by modern applications
- Enterprise storage features integrated and automated with CSI



Nutanix Kubernetes Platform

Multi K8s Distribution
- EKS
- Certified Kubernetes
- AKS

Hybrid Multicloud Fleet Management
- Multitenancy
- App Catalog
- Log Mgmt.
- Quotas
- Cost Mgmt.
- GitOps

Enhanced User Support
- Intelligent Copilot
- RCA
- Anomaly Detection
- Resolution

Runs Anywhere
- Nutanix
- AWS
- GCP
- VMware
- Azure
- Bare metal

Data Services
- Disaster Recovery
- Backup

Platform Services
- AI
- Service Mesh
- Serverless
- Tracing

Operations
- Observability
- Logging
- AI Assistant
- Policies

Cluster Lifecycle Management
OS Upgrade | Kubernetes Upgrade | Cluster Upgrade | Cluster Autoscaling | Cluster Self-Healing

Cluster Services
Install | Air-gapped | Networking | Ingress | Load Balancing | Storage | Security | RBAC | SSO

Kubernetes
Pure Upstream Kubernetes

Linux OS
Rocky Linux™ | Ubuntu | Red Hat

(Managed OS)

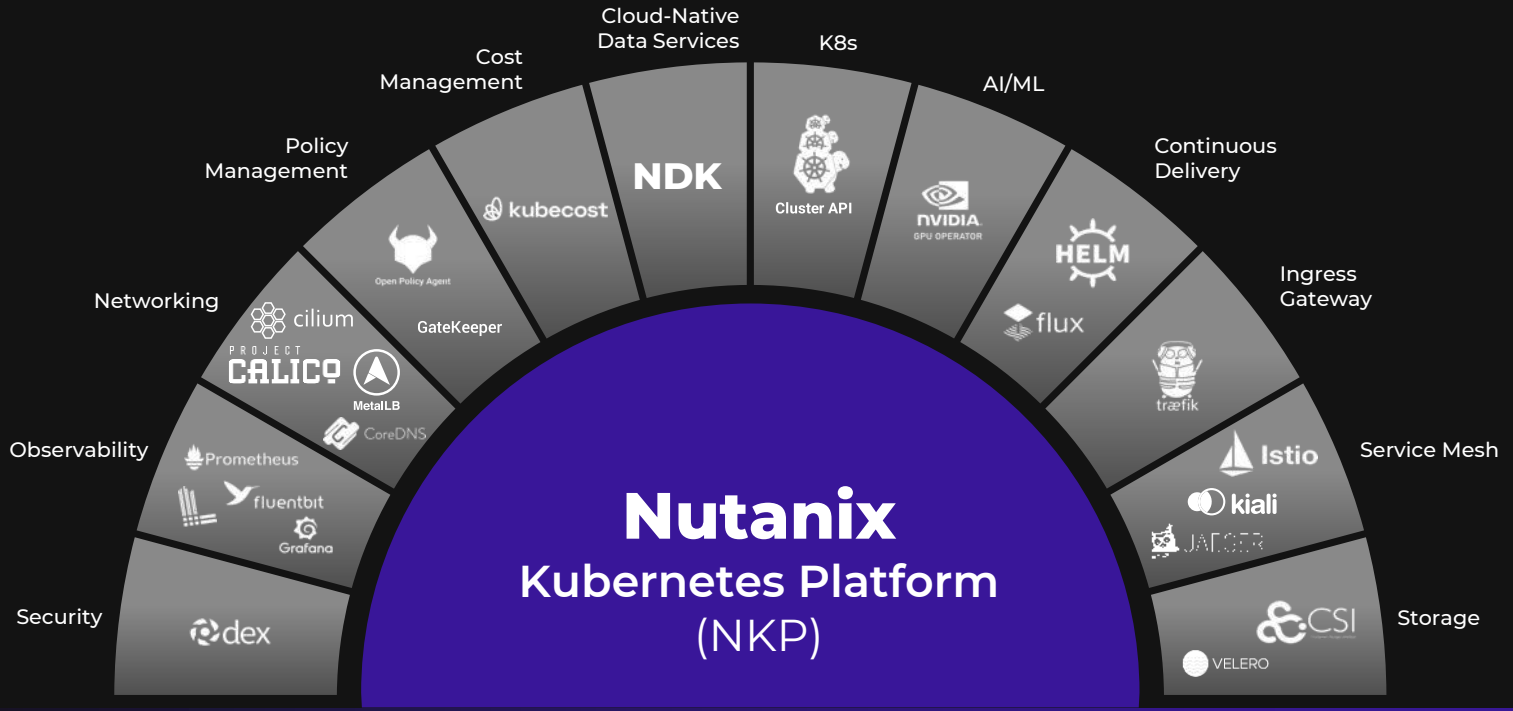
Bring-Your-Own

Infrastructure
Edge | AI-Optimized Infra | Private Cloud | MSPs | Public Cloud | Physical

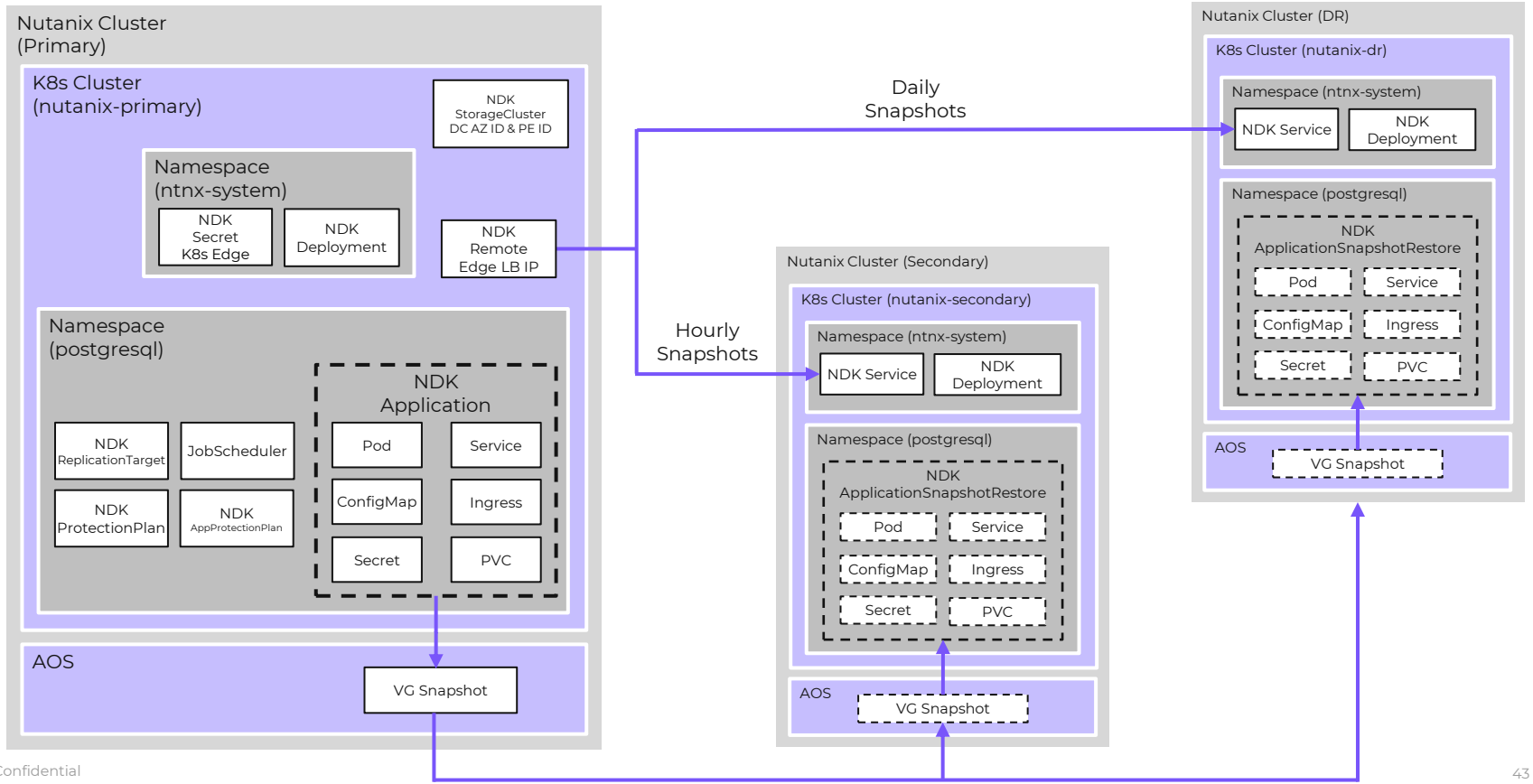
Simply

Deploy, Secure, Manage & Upgrade

Enterprise-Ready Cloud Native Stack at Scale



Use Case: Multisite and Multi cluster Replication



1000+ Solutions Validated

Ecosystem Extends Platform Reach

Data Protection	Network / Security	VDI	Mgmt / Ops	Apps / DevOps
Acronis	Cisco	Citrix	Ansible	Cloudera
arcserve	Check Point Software Technologies Ltd	Parallels	bmc	NVIDIA
Cohesity	CrowdStrike	NVIDIA	Flexera	Rancher
Commvault	Fortinet	IGEL	PowerShell	Red Hat
HYCU	F5	VMware	ServiceNow	SAP
rubrik	Juniper Networks		Splunk>	SUSE
Unitrends	McAfee		Terraform	
VeeAM	paloalto Networks			
Veritas	Symantec			
	Trend Micro			

Verticals: Avid, milestone, Genetec, AVEVA, Epic, MEDITECH

https://portal.nutanix.com/page/documents/compatibility-interoperability-matrix/software

Validated workloads

Data Analytics

- hadoop
- presto
- VERTICA
- sas viya
- snowflake
- dremio

Data Store

- elastic
- splunk>
- CONFLUENT Kafka
- kubernetes
- GitLab

Data Pipeline

- Spark
- nifi

AI/ML

- DKube
- ForePaaS

Data Sync

- NASUNI
- ctera
- PEER
- LucidLink
- PANZURA

File Manage

- VARONIS
- wasabi
- komprise
- netwrix
- ATEMPO
- Inspire

Surveillance

- Genetec
- milestone
- SYNECTICS

Healthcare

- Epic
- MEDITECH
- CHANGE HEALTHCARE
- IBM Watson
- GE Healthcare
- SECTRA
- FUJIFILM

Data Protection

- storware
- Acronis
- VERITAS
- rubrik
- COMMVAULT
- HYCU
- VEEAM
- Quest

Archive

- IBM FileNet
- rubrik
- Veritas Enterprise Vault
- Carestream
- opentext
- iTernity

Backup

- Veritas NetBackup
- HYCU
- VEEAM
- IBM Spectrum Protect
- COMMVAULT
- arcserve
- Acronis

Antivirus

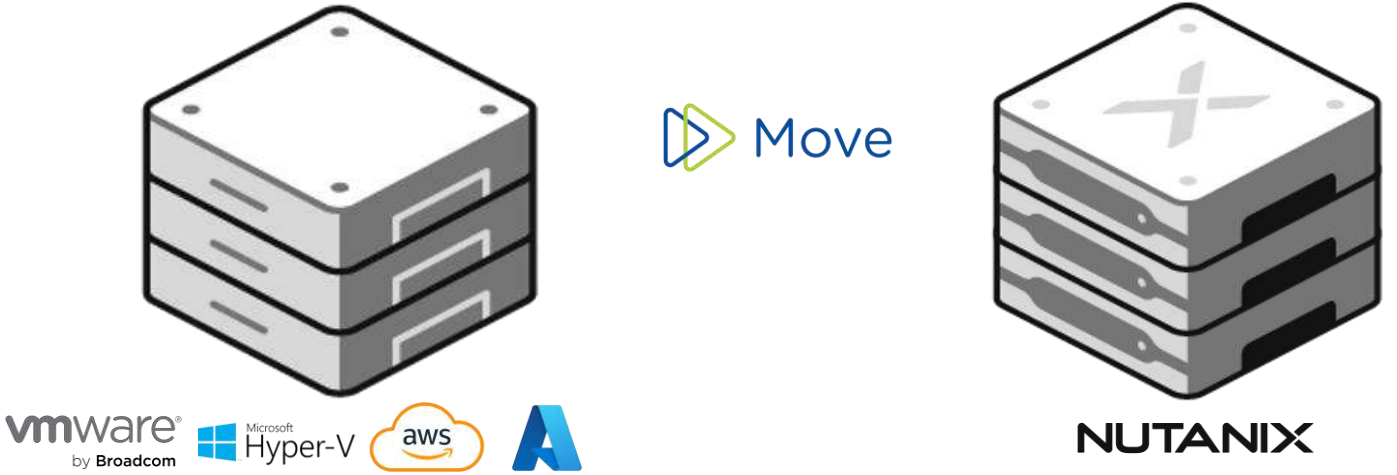
- Symantec
- TREND MICRO
- McAfee
- Bitdefender
- OPSWAT.
- SOPHOS
- F-Secure
- GLASSWALL
- Nucleus

How to Migrate

NUTANIX

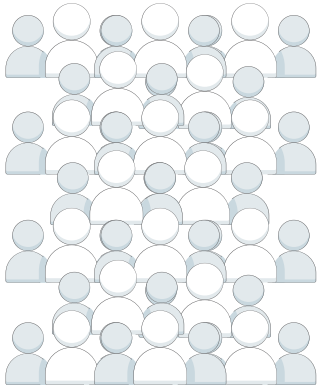
Nutanix Move

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



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

Move Customer Adoption



10,000s of Customers

1,00,000+ VM Migrations

Windows Server 2022 · ubuntu · Red Hat · Windows Server 2016 · Windows Server 2012 · CentOS · SUSE · Windows Server 2008 R2 · FreeBSD · ORACLE Linux · Windows 7 · Rocky Linux · debian

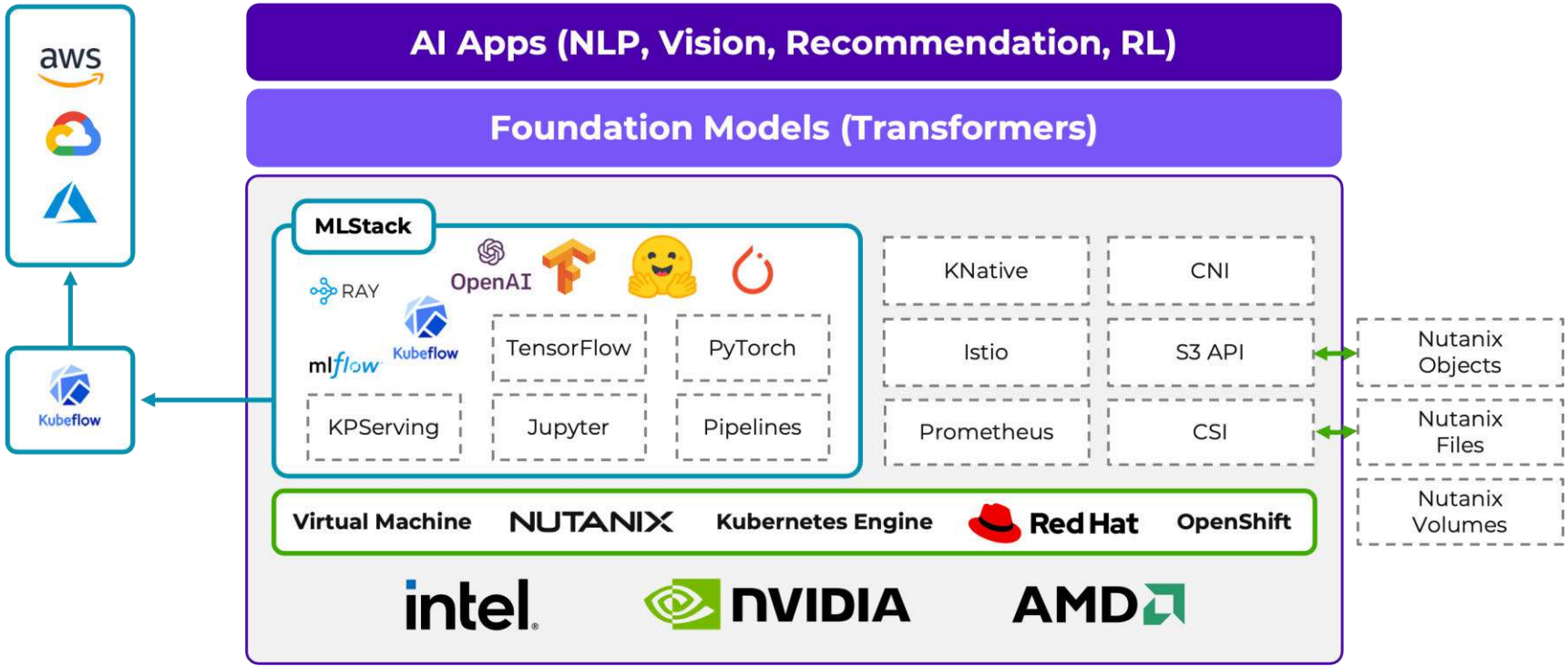
Nutanix Cloud Platform
Acropolis Hypervisor

7+ years since launch

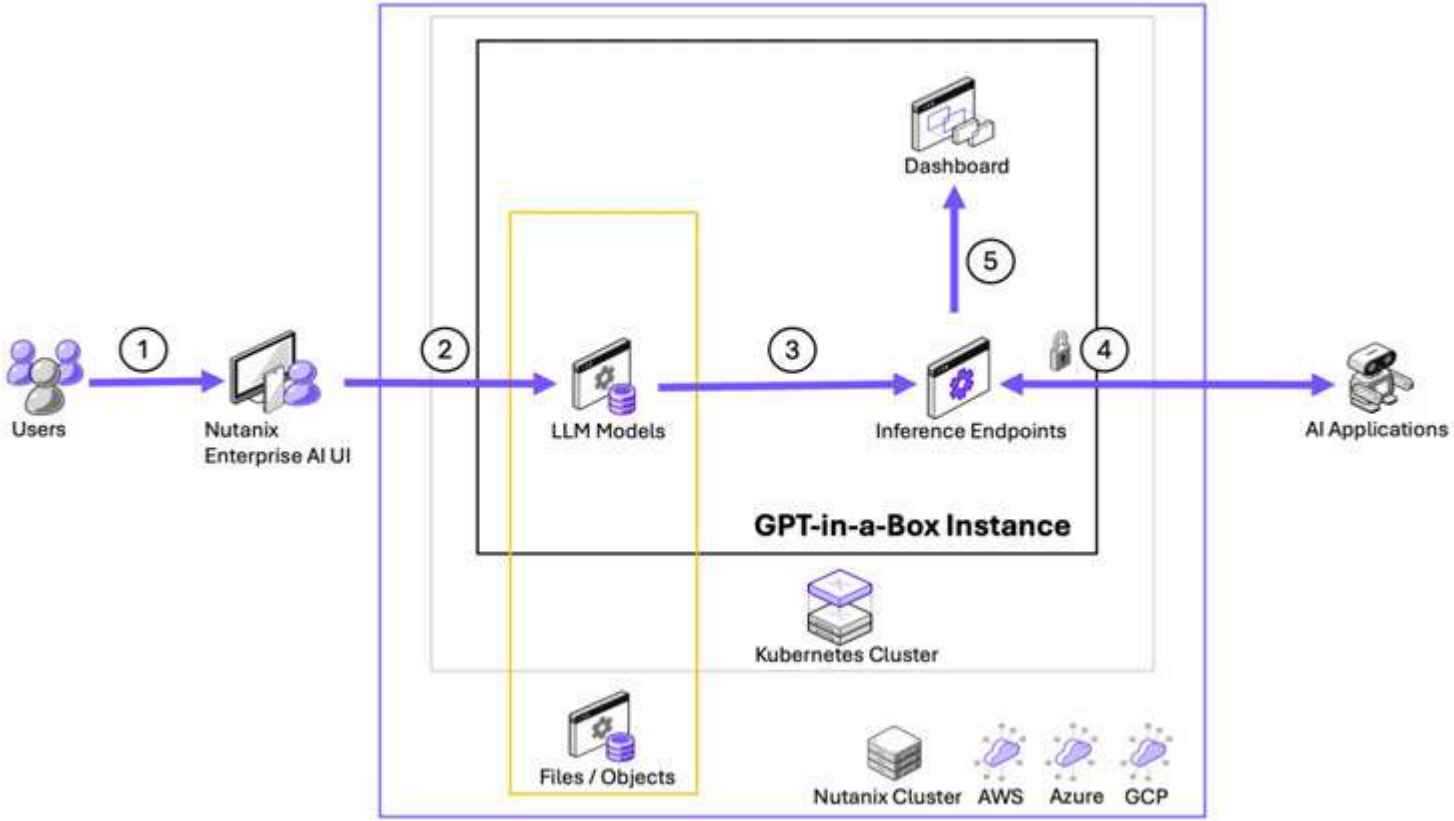
AI ERA

NUTANIX

Nutanix Multicloud AI Stack



Nutanix Enterprise AI Workflow



Conclusion

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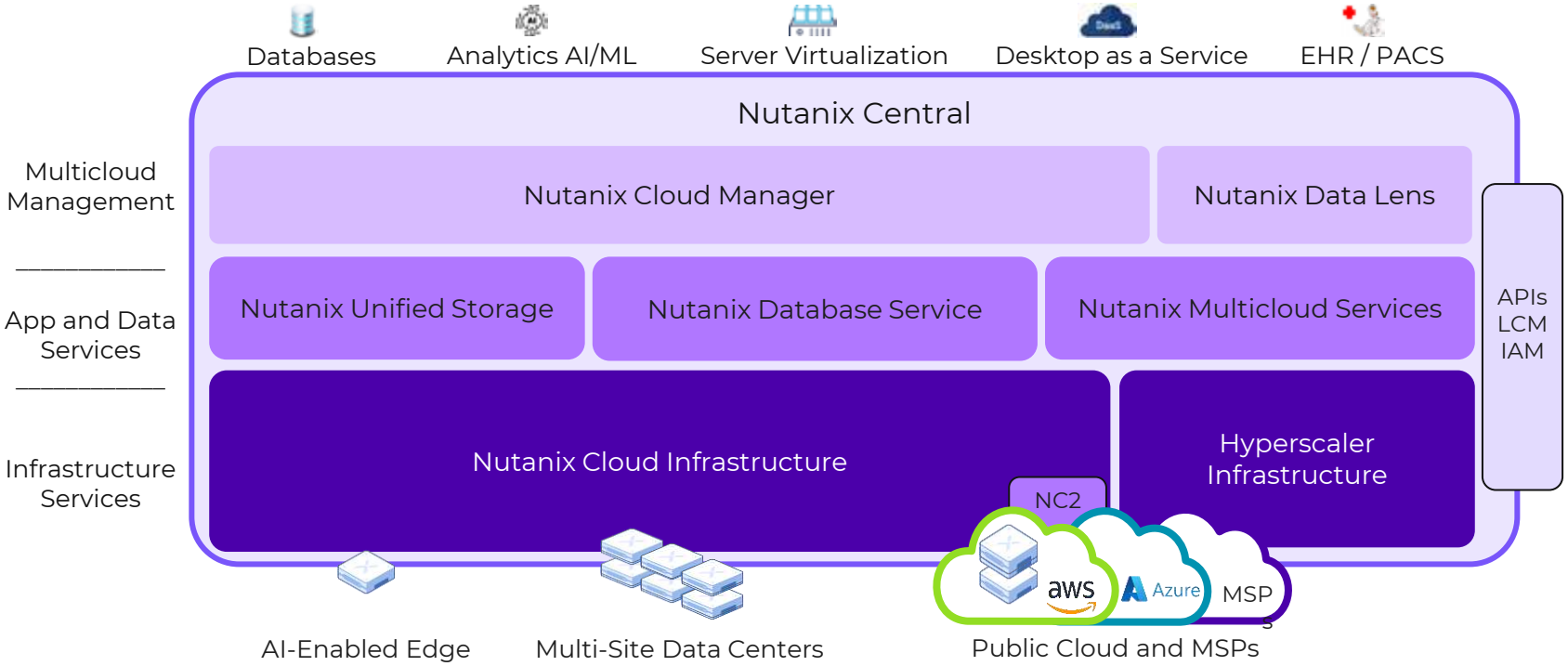
Nutanix Cloud Platform



Nutanix Benefits

- **Integration** – all components are integrated with each other via Nutanix software;
- **A single management interface for everything** - virtualization, storage, monitoring, firmware and software updating, etc.;
- **Automated software update system** for the hardware and software complex (Nutanix software, hypervisor, firmware for all server components);
- **High performance** – each server is a storage controller, optimization of read operations (hot data is stored on fast disks of the server where the VM is running for quick local access to it);
- **Fault tolerance** – each server is a storage controller, all disk's resources are simultaneously involved in recovery;
- **No highly specialized engineers required;**
- **Security** – centralized control over the security;
- **Additional functionality** - network virtualization, L4 tag-based firewall, SMB/NFS/S3 storage, database management, integration with AWS/Azure.

What does the Customer get with Nutanix?

- **Investment protection –** modernization does not require decommissioning of existing equipment;
- **Simplification of IT infrastructure –** reduction of architecture complexity, components integration, standard server equipment, the intelligent system like a smartphone;
- **Flexibility –** you can use servers of various configurations to achieve business requirements;
- **Reliability and Performance –** Distributed System Architecture with Multiple Controllers and Load Balancing;
- **Reducing human risks –** automation of all processes: built-in functionality for restoring integrity and updating the software and hardware complex without human intervention.

NUTANIX

THANK YOU