

Why Nutanix HCI and VMware Run Great Together





Why do Nutanix HCI and VMware run great together? It's simple. It was designed that way from the start. In fact, when Nutanix set out to simplify IT infrastructure by pioneering the hyperconverged infrastructure (HCI) market, its sights were set first on delivering robust, easy-to-deploy, fully converged server-storage solutions for VMware virtualization and end-user computing environments. Nutanix founders launched the company at VMworld 2012, with Nutanix software providing a simpler and more efficient infrastructure for running applications hosted on VMware virtualization.

Today, Nutanix is widely known for its commitment to open systems and offering its customers the freedom to choose the right technologies for their specific use cases. Nutanix HCI software supports the most popular hypervisors in the industry, including VMware's ESXi, Microsoft Hyper-V, and Nutanix's own license-free AHV hypervisor. More than 10,000 Nutanix customers run ESXi with the Nutanix platform, which is a testament to our ongoing commitment to interoperability and the value that our VMware users see in Nutanix.



Nutanix HCI brings advanced yet simplified distributed systems architecture to your VMware environment, enabling you to modernize your entire infrastructure while continuing to leverage familiar VMware interfaces and integrations.

We invite you to stay with us through these next few pages to learn how customers leveraging Nutanix and VMware joint solutions benefit from higher performance and availability, easy scalability, faster time-to-value, and unmatched cost effectiveness.

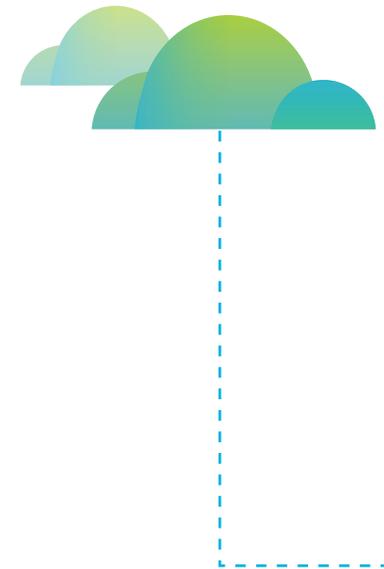
MOVE BEYOND TRADITIONAL STORAGE

VMware is the virtualization standard in many organizations. However, relying on traditional SAN-based infrastructure for application mobility or for supporting large business-critical applications is limiting the flexibility and agility of your VMware environment.

Modern businesses rely on a wide variety of applications and workloads, each with their own unique requirements and importance to the business. In a traditional 3-tier environment, this often means creating dedicated silos of infrastructure that are optimized to solve specific problems. For example, you may use dedicated infrastructure for VDI deployments to prevent issues such as boot storms or recompose operations from negatively impacting critical database workloads. This results in fragmented environments, prevents resources from being shared or easily re-purposed, and makes it difficult to achieve economies of scale, hampering productivity and slowing down projects.

While your VM layer is a distributed pool of resources, your storage layer remains an isolated silo that has to be accessed across the network. Each server running virtual machines is connected to a centralized storage array, typically with at least two storage controllers in an active-active or active-passive configuration. In this configuration, all storage I/O must travel from the hypervisor across the storage network (either IP or Fibre Channel), and through one or both of the storage controllers before hitting the actual storage devices. Scalability becomes a major issue. As you add more workloads, more storage I/O will flow through the same storage controllers, which will ultimately lead to storage contention issues. Storage arrays are typically large, expensive purchases and require extensive planning in order to avoid under or over-buying. This planning process consumes large amounts of staff time, makes it difficult to react quickly to new initiatives, and is often imprecise due to the large time frames involved.

In most IT environments, the hypervisor, servers, network, and storage are all managed and operated by separate teams. So, this siloed approach can also hamper business agility and complicate troubleshooting.



NUTANIX IMPROVES AND SIMPLIFIES VMWARE ENVIRONMENTS

When you replace your traditional SAN infrastructure with Nutanix HCI, you are trading in complexity for simplicity. Nutanix HCI converges the entire datacenter stack—compute, storage, storage networking, and virtualization. It doesn't rely on traditional SAN, NAS, or expensive storage network interconnects. Instead, it combines commodity datacenter server hardware with locally attached storage, all powered by a distributed software layer that enables enterprises to size their workloads precisely and to scale easily as needed.

HERE'S HOW IT WORKS:

As you can see in the diagram on the next page, you still have a three-node cluster. But now, each server has local disks. These disks may be NVMe, SSD, spinning disks, or a combination of each. You can also mix and match hybrid and all-flash nodes in the same cluster.

There's no storage array in this environment. Instead, Nutanix has a virtualized storage controller (what we call a controller virtual machine or CVM) running on each node in the cluster. Now, all storage management is VM-centric with I/O optimized at the VM virtual disk level, distributing

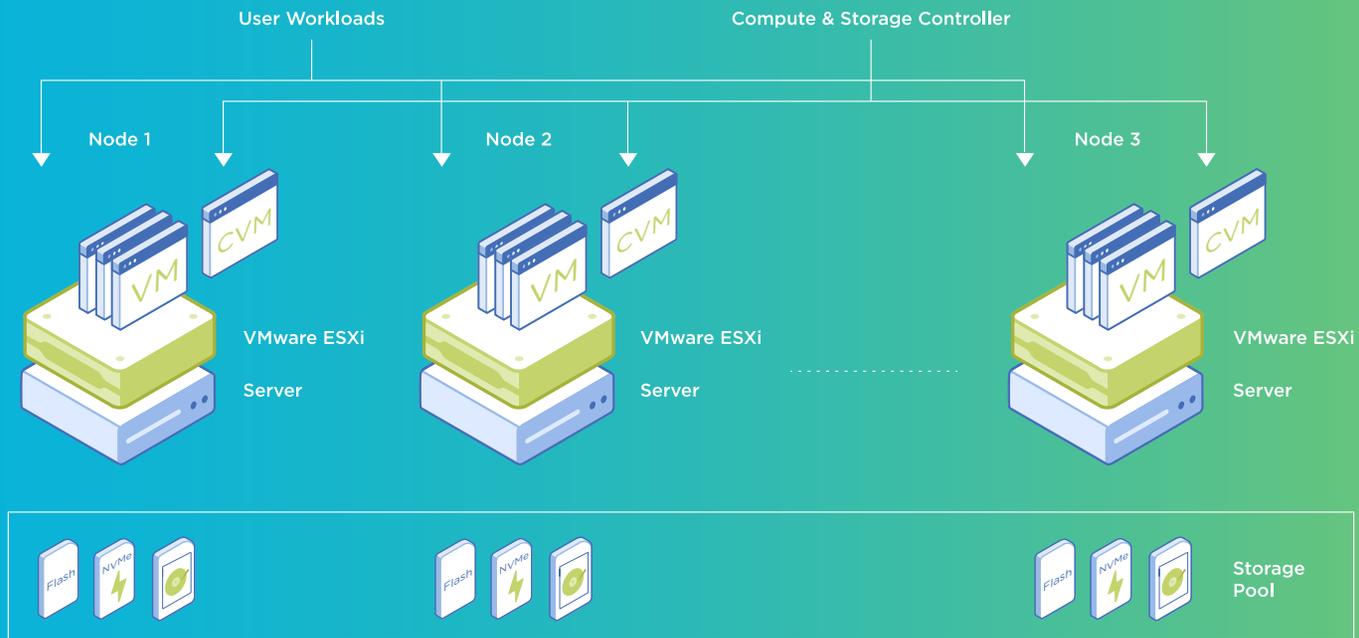
all operating functions across the cluster for superior performance and resilience.

What's more, the storage fabric uses AI algorithms to automatically tier data across the cluster to the appropriate class of service based on usage. This provides consistent and predictable high performance by ensuring that your most frequently accessed data is available in memory or in flash on the local node, while also preventing hot spots or resource contention. And because it's virtualized, the CVM can interoperate with VMware vSphere, Microsoft Hyper V, or Nutanix AHV.

Nutanix HCI provides storage services for VMs running on VMware's ESXi hypervisor and integrates seamlessly so VMware administrators can manage their VM workloads with vCenter.



NUTANIX HCI ARCHITECTURE



ONE PLATFORM FOR ALL OF YOUR WORKLOADS AND USE CASES

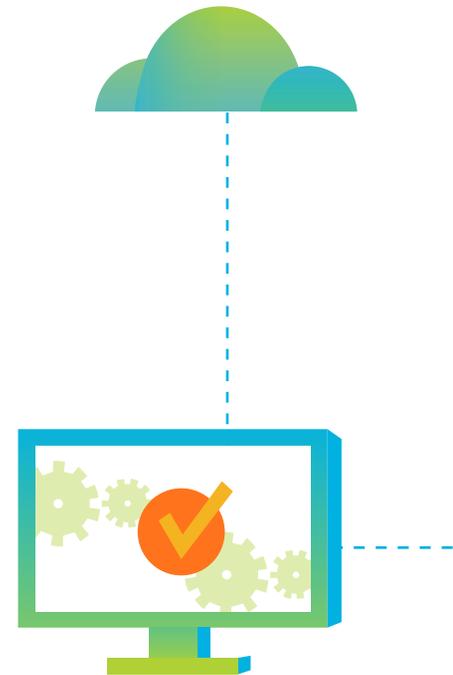
Nutanix HCI is not just for modern cloud-native apps and remote offices. Our advanced distributed systems architecture enables Nutanix HCI to run the most resource-intensive workloads in your datacenter, including finance applications and enterprise resource planning (ERP). Perhaps that's why more than half of our customers predictably and reliably run their mission-critical applications on HCI.

With Nutanix HCI, you can modernize your entire infrastructure, not just pockets of it—and maximize performance, agility, resource efficiency, and cost for all of your workloads.

WITH NUTANIX HCI, YOU CAN:

- > **Scale** Horizon and Citrix desktops predictably and easily, optimized with data locality and shadow clones
- > **Virtualize** distributed databases like Hadoop, SAS and MongoDB without SAN bottlenecks
- > **Run large SQL databases** with optimized performance
- > **Simplify** provisioning, operations, and lifecycle management of cloud-native workloads
- > **Run big data workloads** like Hadoop, SAS, and MongoDB
- > **Store** files and objects without the need for dedicated infrastructure

Nutanix also makes it simple to get started. Many of our customers roll out their HCI deployment in phases, targeting strategic portions of their infrastructure—using vCenter to administer VMs on both HCI and their legacy environments powered by SAN storage.



THE PLATFORM FOR HYBRID MULTICLOUD

ONE PLATFORM. ANY APP. ANY CLOUD.



Enterprise Apps



Cloud Native Apps



Analytics/ML



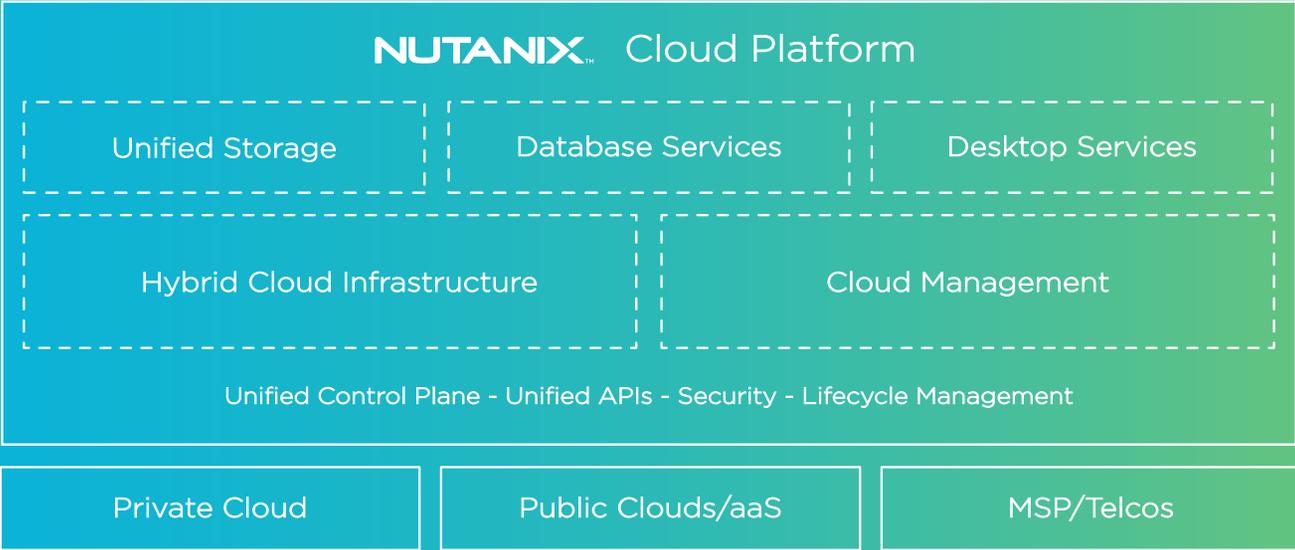
Databases



Edge



EUC





THE BENEFITS OF SIMPLICITY ARE MANY

Nutanix HCI is engineered with distributed systems technologies developed for massive-scale cloud infrastructure and is designed to be simple to use and highly automated to greatly reduce the need for manual administration. The combination of cloud engineering and consumer-grade design enables Nutanix HCI to power global IT infrastructure deployments with incredible cost efficiency and administrative agility.

UNPRECEDENTED OPENNESS

Simplicity is nothing without flexibility. We also offer a level of choice that is unheard of in the industry. From the hardware customers want to run to the hypervisor and virtualization they require for their workloads—everything from procurement model and license duration to their choice of cloud is up to our customers.

UNMATCHED RESILIENCY

Advanced distributed data processing, replication, encryption, and automated self-healing means your data is better protected than ever before. Applications stay running, regardless of underlying hardware and software failures, including during patching and upgrades.

PREDICTABLE PERFORMANCE AT ANY SCALE

If you need more storage performance, capacity, or compute power, you can simply scale the cluster out by adding more nodes. To ensure performance as you scale, data is written on the local node (and elsewhere for data protection), so read requests rarely cross the network. This results in consistent and predictable performance, no matter the size of the cluster, while keeping congestion on the network to a minimum.

SIMPLIFIED MANAGEMENT OF YOUR ENTIRE ENVIRONMENT

Eliminate management silos, automate day-to-day operations, simplify monitoring and remediation, and

anticipate capacity needs—all with a single pane of glass. With Prism, you'll be handling most management tasks with a single click for both, Nutanix and VMware environments.

COMPREHENSIVE SECURITY

Security is integrated into every layer of the Nutanix HCI stack, making it easy to protect your organization's digital assets from theft or ransom. Nutanix augments VMware's own security posture by providing built-in tooling like automated baseline compliance and key management, ensuring a total infrastructure solution for your hybrid cloud.

ZERO-DOWNTIME UPGRADES

Another benefit of having the storage controller run as a virtual machine is that it can be upgraded independently of the hypervisor. Rolling upgrades can be performed with the Nutanix Life Cycle Manager (LCM), which automatically maps dependencies and orchestrates patching of everything from Firmware to BIOS up through the hypervisor and HCI software. As each host is upgraded, VMs migrate to other hosts in the cluster temporarily, or if only the HCI software is being upgraded the hypervisor temporarily gets its storage from another node in the cluster, so there's zero impact to your virtual machines.

Nutanix is simpler to deploy, manage, upgrade, reallocate, and refresh. And because it's a subscription service, it's also simpler to purchase.

MORE THAN HCI

NUTANIX IS A COMPLETE ENTERPRISE CLOUD FRAMEWORK

When you buy into Nutanix HCI, you're investing in a complete, integrated framework designed to simplify IT by making infrastructure invisible no matter what and where it is.

> **Nutanix Unified Storage™ solution** with Nutanix Files™, Nutanix Objects™, and Nutanix Volumes™ enables customers to manage and protect their structured and unstructured data wherever it lives, on-premises, on the edge, or in the public cloud.

> **Nutanix Era** eliminates database management complexity by up to 90% by bringing one-click simplicity and invisible operations to database provisioning and lifecycle management. Era enables the ultimate in database freedom, allowing customers to develop, provision, clone, and refresh databases to any point in time in any environment, whether private, public, or hybrid cloud.

> **Integration with non-Nutanix VMware environments** Nutanix products are designed to integrate with VMware environments, including VMware clusters not running on Nutanix. AI-driven capacity planning, application administration and self-service, and infrastructure monitoring are a few examples of a growing portfolio of integrated capabilities.

> **Nutanix Hybrid Multicloud Platform** makes hybrid cloud mobility and interoperability a reality with a single point of control for all of your applications and data across your private, public, and hybrid clouds. And because HCI is a foundational component of the solution, HCI customers are propelled further on their hybrid cloud journey, with the agility to run applications in a given cloud based on the economic, compliance, performance, availability, and security criteria that matter to them most.



HCI is becoming a de facto standard for data-intensive services like data protection, backup and disaster recovery, and is increasingly a primary platform for deploying modern hybrid cloud infrastructure.

Lucas Mearian,
Infrastructure Analyst, IDC

PROVEN SOLUTION WITH HIGH CUSTOMER SATISFACTION

Net Promoter Score (NPS) is an industry-recognized measurement of customer satisfaction and loyalty. In an industry who's average NPS is 56, Nutanix is proud to have earned an **NPS of over 90** for the last seven years running.

“Nutanix is a very flexible, cost effective, and extremely scalable platform. It not only enables us to meet all of our current project goals, it is very easy to modify the configurations to meet future needs as well.

— Jon Walton, CIO, County of San Mateo

NUTANIX WITH VSPHERE SOLVES YOUR PROBLEMS TODAY, WHILE SETTING YOU UP FOR YOUR HYBRID CLOUD FUTURE

Nutanix HCI integrates seamlessly with VMware vSphere technologies to bring cloud economics, automation, and simplified operations to your datacenter. But what happens when your next application is a better fit for the public cloud? The same HCI platform that formed the foundation for your private cloud can help you move and manage apps in the public cloud, too. Connect to AWS in less than an hour, lift and shift apps, enable bursting and disaster recovery in the cloud, and launch your hybrid multicloud future with Nutanix.

> **Simplify Operations and Maximize Resiliency** - Benefit from tried-and-true vSphere capabilities for all of your workloads without the complexity and fragility of SAN-based infrastructure.

> **Improve Agility and Flexibility** - Shorten planning cycles, provision workloads more quickly, and repurpose infrastructure as needed, enabling your organization to respond more quickly and easily to changing business needs.

> **Optimize Infrastructure Investment** - Bring cloud economics to your VMware deployments with just-in-time scalability, self-service provisioning, and subscription licensing.

> **Make Hybrid Cloud Management a Reality** - Get a leg up on true public and private cloud interoperability and mobility with HCI, a foundational building block of the Nutanix Cloud Platform.



Test Drive Nutanix Today!

Experience the simplicity and agility of the cloud combined with on-premises performance, security, and control without the hardware, setup, or costs. [Test drive](#) Nutanix HCI with our quick and easy guided tour. Or visit www.nutanix.com/vmware to learn more.

[Test Drive](#)

