Unlock a **smarter** HCI solution for your infrastructure demands

A Lenovo and VMware guide

vmware®
by Broadcom

In this guide, learn how hyperconverged infrastructure (HCI):

Delivers a flexible and resilient solution

Simplifies deployment and management

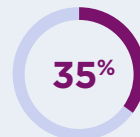Affords a streamlined path to hybrid cloud

And see why the Lenovo and VMware partnership with ThinkAgile VX combined with vSphere® and vSAN™ is delivering the right solution to make it happen.

An introduction to HCI

Business moves fast. Organizations need infrastructure that can move even faster. Demands for data-related insights are increasing, placing added pressure on already constrained IT departments to address these strategic needs while satisfying both operational and security responsibilities.

Nearly 60% of IT leaders are focused on improving growth, scalability, and flexibility to match business needs.[1]

35% of IT leaders say their top transformational priority includes modernizing infrastructure and applications.[2]

Leaders are tapping into vast amounts of data to rapidly identify patterns and insights that accelerate development. Organizations are also transforming, using generative AI and large language models (LLMs) to dynamically extract more value from their data. This is putting even greater demands on IT departments.

The amount of compute needed to train the largest AI models is doubling at least once a year.[3]

HCI's high performance and efficiency create the perfect foundation to meet increasing demands from remote work, big data, security, and mission-critical applications.

As market leaders in cloud and virtualization technology, Lenovo and VMware provide fully integrated solutions that accelerate modernization, reduce IT operational demands, and deliver secure, scalable, innovative infrastructure.

Lenovo and VMware offer a best-in-class HCI solution built on Lenovo ThinkAgile VX appliances and VMware Foundation.

If you want to meet workload demands, maximize efficiency, and drive costs down, this guide is for you.
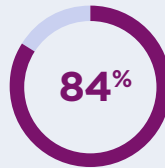
Modernizing infrastructure with HCI

HCI is being increasingly adopted by enterprises seeking secure, scalable infrastructure that's simple to integrate and manage — and future-ready.
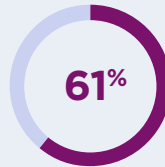
Over 80% of HCI users plan to increase their HCI deployments.[4]

The HCI market is expected to reach a value of more than **$32 billion by 2028.**[4]

But obstacles remain.

84% of data teams describe their current workload as beyond their capacity.[5]

61% of CIOs say managing fragmented IT vendor ecosystems is among the most difficult challenges to solve.[6]

How HCI works

Hyperconverged infrastructure combines compute, storage, networking, and management functions on industry-standard x86 servers with internal storage devices (disk or flash). Using a scale-out architecture, HCI clusters pool physical resources and share them between virtual machines (VMs) running on any node in the cluster.
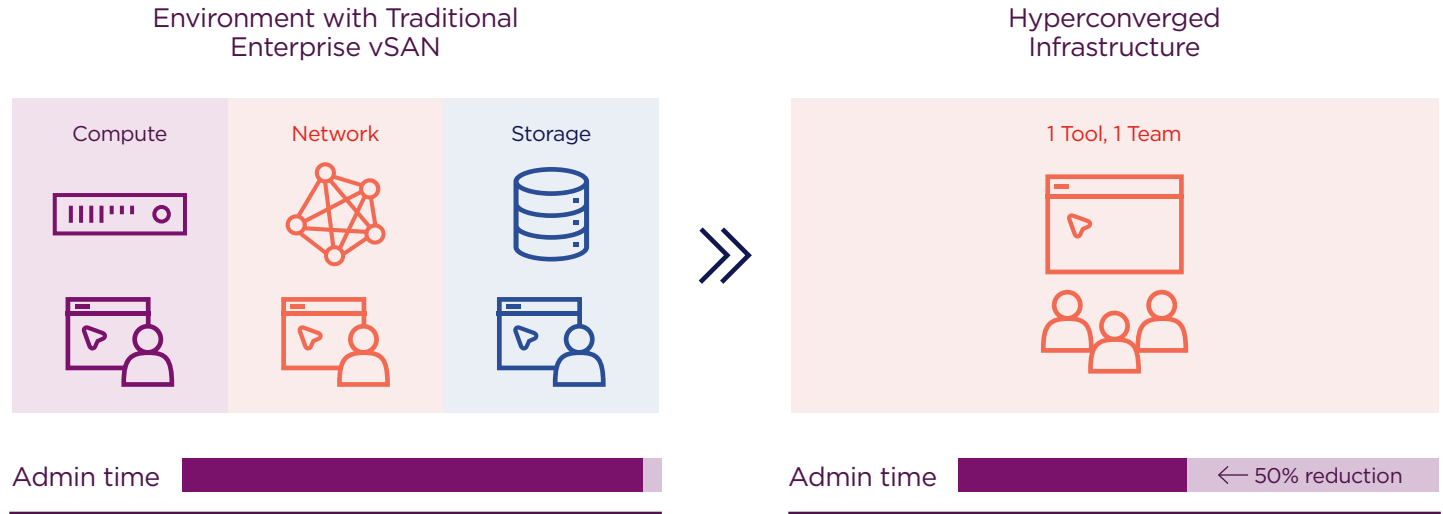
With HCI:

- Three software components make up a hyperconverged platform: storage virtualization, compute virtualization, and management.

- The virtualization software abstracts and pools the underlying resources, then dynamically allocates them to applications running in virtual machines or containers.

- Instead of creating logical unit numbers (LUNs) and assigning virtual machines to them, users simply describe in terms of policies what storage resources are needed for each virtual machine and the software enforces, monitors, and remediates the policies.

- Simplified, workflow-driven operations further reduce manual tasks and help automate entire operations.

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HCI: A more efficient infrastructure

Many organizations are realizing that global business models and highly scalable cloud or IoT workloads cannot be run optimally using traditional IT infrastructure.

Hyperconverged infrastructure delivers an important building block for companies and has reached a high level of technological maturity in terms of performance, security, and architecture.

HCI breaks down silos and streamlines operations

Environment with Traditional Enterprise vSAN

Compute	Network	Storage

Hyperconverged Infrastructure

1 Tool, 1 Team

Admin time

Admin time ← 50% reduction

Why make the move now?

1 **To reduce complexity**
HCI simplifies infrastructure in order to reduce the time needed to acquire new systems or maintain existing ones.

2 **To control costs**
HCI solutions optimize budgets for physical and professional resources to meet growing organizational demand and SLAs for IT services.

3 **To prepare for hybrid cloud**
HCI modernizes the data center in an effort to protect current investments while embracing edge and public cloud use cases.

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A smarter path to HCI

HCI-optimized solutions from Lenovo and VMware

The past few years have transformed the ways the world does business, and the need for performance, reliability, and scalability in IT infrastructure has increased. This is a big reason why many organizations have moved from traditional architecture to HCI.

Future-proof your data center with HCI

With digital goods and services driving modern industry, businesses need to become ultra-efficient to meet such aggressive demands. Time-to-market expectations accelerate, and more mission-critical applications must move outside the core data center. In turn, IT must evolve to a cloud operating model that meets the key expectations of business leaders — namely speed, agility, and cost advantages.

The industry-leading HCI software stack from VMware

VMware provides more choice and flexibility than any other hyperconverged infrastructure (HCI) vendor, allowing you to take full control and meet your cloud requirements. The stack is completely extensible in the public cloud, creating a true hybrid cloud implementation that supports your modern application needs.
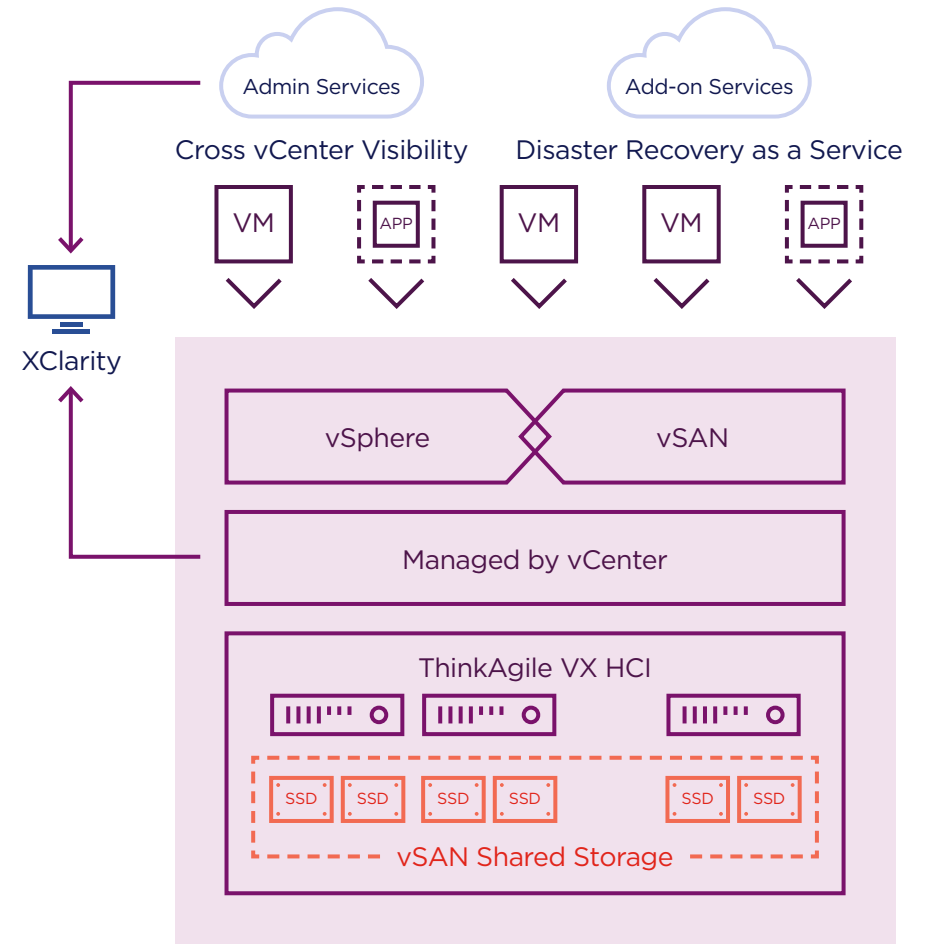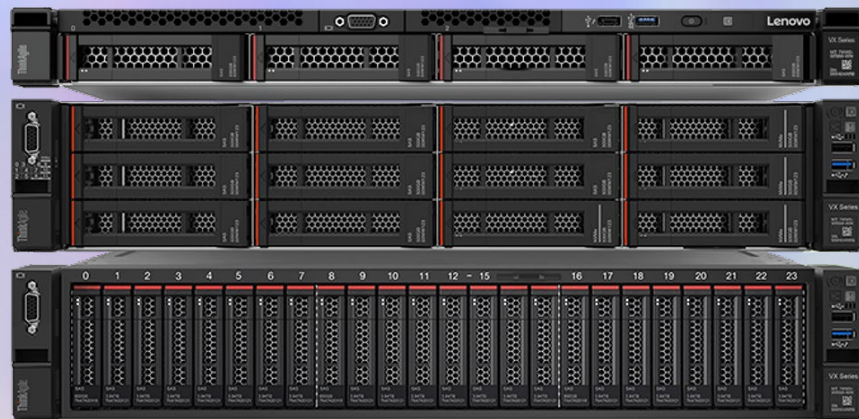
How the VMware HCI stack works

The VMware HCI stack has four tightly integrated software components included with VMware vSphere Foundation:

- Storage virtualization (vSAN)
- Compute virtualization (vSphere)
- Networking virtualization (NSX)
- Advanced management, including automation (vCenter)

Virtualization software abstracts and pools resources, then allocates them dynamically to applications in VMs or containers.

Lenovo and VMware HCI integration

A smarter path to HCI

Accelerate business value with ThinkAgile VX and VMware vSphere Foundation

Lenovo ThinkAgile VX appliances combine the power and reliability of Lenovo ThinkSystem servers, storage, and networking with the simplicity and flexibility of VMware vSphere Foundation hyperconverged software — creating a fully modernized IT infrastructure.

Lenovo and VMware have developed an integrated solution that is prevalidated and preconfigured to help organizations meet even the most demanding performance requirements of their consolidated workloads while managing real-time business needs.

vSphere Foundation enables you to create and manage virtual machines on a physical host computer. VMs are essentially computers within a computer, each running its own operating system and applications. This means you can run multiple operating systems and applications on a single physical host, which can save you money on hardware and software costs.

VMware vSAN, included with vSphere Foundation, is a distributed storage virtualization software that turns the local storage of each server in a VMware vSphere cluster into a single, shared pool of storage. This means that VMs on any host in the cluster can access data stored on any other host.

Together, the ThinkAgile VX HCI solution with VMware vSAN and vSphere cluster lowers total cost of ownership, accelerates responsiveness to business needs, and provides predictable performance and scaling with ease of management.

Explore the components of our hyperconverged appliances in this **3D interactive tour of the Lenovo ThinkAgile VX Series.** You'll be able to display different views and rotate and zoom in to see the models in greater detail.

For more information, you can also view the **ThinkAgile VX Series data sheet.**

Lenovo ThinkAgile VX

Streamlining hybrid cloud

Making the move to HCI may seem daunting, as it involves new software and new classes of hardware that your team will need to become familiar with. But it need not be a time-consuming, highly manual process. One of the strengths of HCI is that it enables rapid application deployment with workload-centric, policy-based management.

Provisioning, deployment, and administration can be fast and easy with preconfigured hyperconverged infrastructure. ThinkAgile VX integrates easily, saving time and effort by arriving optimized with fully validated hardware and firmware. VX systems can automatically create or join an existing vSAN cluster to simplify deployment.

Using Lenovo ThinkAgile VX with VMware Cloud Foundation, you can realize an up to 75% reduction in time to deploy.

It all starts with the ThinkAgile VX Deployer tool, a web-based UI that enables users to deploy, integrate, and expand clusters quickly and sensibly via a single tool.

Management and orchestration tools like VMware vCenter's integration with Lenovo XClarity provide single-pane-of-glass management capabilities, removing complexity and speeding up response time.

Compared to a traditional data center solution, a properly implemented VMware-based HCI solution from Lenovo can reduce costs and complexity while accelerating performance and increasing scalability.

HCI also offers seamless integration into cloud services and migration between cloud suppliers and on-premises infrastructure, which makes it a forward-thinking approach that combines all the elements of a traditional data center: compute, networking, storage, and management.

Making the move if you have VMware in place

Depending on your existing stack and use of VMware, migrating to HCI has been streamlined:
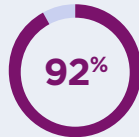
- Expand your suite of virtualization tools with VMware vSphere Foundation
- Enable hybrid cloud migration with VMware Cloud Foundation
- If you're already using other cloud or virtualization technology, or if you're just starting out with cloud, you can take advantage of the Lenovo and VMware solutions to move to HCI quickly

After you've made the move, you'll realize just how well an HCI solution aligns with your current and future business strategies and how capably it handles the increasing volume and complexity of modern workloads.

Ensure deployment success with Lenovo TruScale

Lenovo Professional and Managed Services ensure deployment success by providing expertise and global coverage to address any expertise or resource gaps.

92% of CIOs would definitely or probably consider adding new as-a-service offerings over the next two years.[3]

Lenovo TruScale Hybrid Cloud with VMware is a secure Infrastructure as a Service solution featuring Lenovo Professional Services and cloud expertise.

- Improves resilience
- Reduces complexity
- Frees up IT resources
- Streamlines it all into a scalable, OpEx pay-as-you-go model

Learn more about TruScale Hybrid Cloud at **www.lenovo.com/TruScale-HybridCloud.**

Are you ready?

You've seen in this guide the many benefits of migrating to HCI and the urgency of accomplishing the transition quickly and efficiently. Customer needs are changing fast. Your IT infrastructure must adapt and respond with a velocity to match.

Count on Lenovo and VMware to continue leading the way

Lenovo and VMware are here to help. We're continuing to develop industry-leading solutions that will anticipate and meet the needs of an ever-evolving global marketplace.

Have questions or need more info?

We'd love to hear from you or learn about your organization's challenges and goals. Just fill out and submit our brief information form in the link below. A member of the Customer Marketing Team will contact you.

Contact us →

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Sources

1   Deloitte Insights, "Tech Trends 2022," 2022
2   Foundry, "State of the CIO Survey 2023," January 2023
3   Accenture, "Technology Vision 2023," March 2023
4   VMware, "Hyperconverged Infrastructure (HCI) Use is Growing at the Edge, According to 451 Research," July 2022
5   Matillion, "Data Productivity: A Survey of Data Experts," June 2023
6   Lenovo, "The Resilient CIO: Lenovo Global Study of CIOs 2023," June 2023

Smarter technology for all

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