Exploring Alternatives to VMware:
A Guide for IT Professionals

A Practical Comparison of Microsoft, Nutanix, and Proxmox Virtualization Technologies With Lenovo System References

Focus Group Technologies

Introduction

VMware has long dominated the virtualization and private cloud market. However, recent changes in licensing and product strategy under the acquisition by Broadcom have left many customers especially in the mid-market, reassessing their options. This document explores three major alternatives to VMware: Microsoft, Nutanix, and Proxmox, and how they integrate with Lenovo Infrastructure to create practical, enterprise-ready solutions.

Focus Group Technologies

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Why Consider Alternatives to VMware?

Here are several key reasons organizations are considering alternatives to VMware, particularly following the Broadcom acquisition:

Reasons to evaluate alternatives include:

Rising costs and licensing changes post-acquisition by Broadcom

- Perpetual licenses were discontinued.
- Only subscription-based models remain.

Elimination of popular bundles (e.g. vSphere Essentials, ROBO)

- Example: vSphere Essentials Plus used to be a cost-effective entry point. Now, customers must subscribe to full vSphere Foundation bundles, which may include features they may not need.

Support model changes and concerns

Need for either simplification or more capable hyperconverged deployments

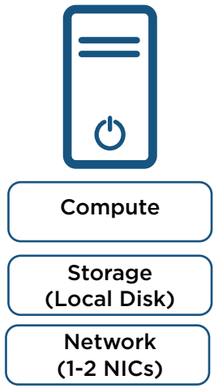
This document focuses on **end-user needs** simplicity, cost-efficiency, scalability, and ecosystem support.

Comparing Local Storage, 3-Tier, and HCI Architectures

Deployment of virtualised platforms can take on several different architectures. Each type of architecture has different capabilities, functions and costs.

It is important to understand each architecture as a basis for your virtualisation platform.

Overview of Deployment Models:

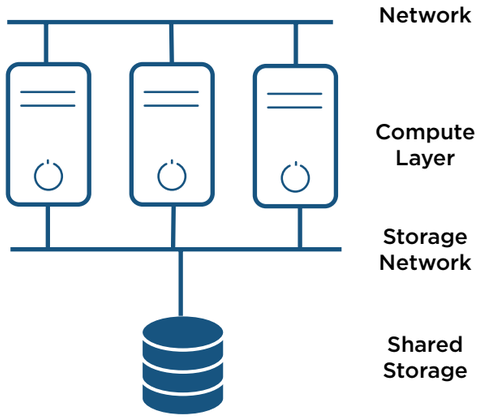


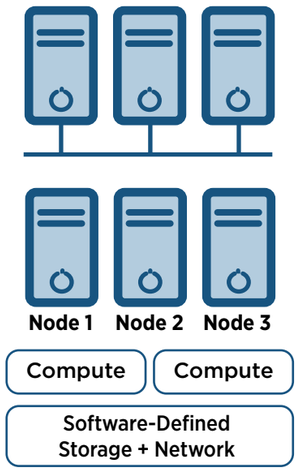
Standalone (Local Storage, Non-Clustered)

- A single server (or series of single servers) with internal disks and a hyper-visor (e.g. VMware ESXi Free, Microsoft Hyper-V Server/Windows Server or Proxmox VE)
- No shared storage or high availability or scalability
- Simple, low-cost, often used for labs, edge sites, or isolated workloads

3-Tier Architechture

- Traditional model with separate compute, storage (SAN/NAS), and network
- High availability via shared storage and clustering
- More complex, more scalable





Hyperconverged Infrastructure (HCI)

- Combines compute, storage, and virtualization in a unified platform
- Built-in clustering and distributed storage (e.g., vSAN, Nutanix, Azure Stack HCI)
- Scales out by adding nodes

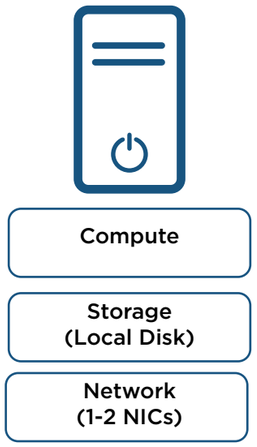
Architecture Key Comparison Table

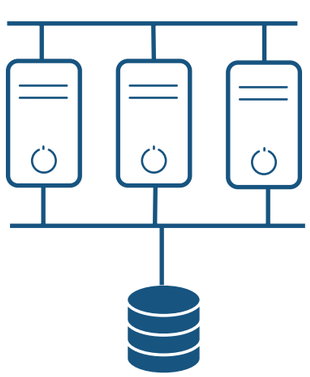
Feature	Standalone	3-Tier Architecture	Hyperconverged Infrastructure (HCI)
Basic Concept	✓ Single server with local storage and compute in one box.	✓✓ Separate layers: compute (servers), storage (SAN/NAS), networking.	✓✓✓ Integrated compute + storage + networking in each node, managed as a single system.
Scalability	✗ Vertical only (add resources to one server).	✓✓ Horizontal (add servers/storage independently).	✓✓✓ Horizontal scale-out (add nodes for both compute & storage together).
High Availability (HA)	✗ None – single point of failure	✓ Supported via clustered compute + shared storage.	✓✓ Built-in redundancy and replication between nodes.
Storage	✗ Local disks only.	✓ Centralised SAN/NAS.	✓✓ Distributed, software-defined storage across all nodes.
Management Complexity	✓✓ Very simple (single box).	✓ High – requires separate management for compute, storage, and networking.	✓✓✓ Moderate – single management plane, but more integrated configuration.
Performance	✓ Limited to local hardware specs.	✓✓✓ High performance – dedicated storage network and compute separation.	✓✓✓ High performance – low-latency node interconnects, software-optimised data paths.
Performance Tuning	✓ Minimal – basic BIOS/OS settings only.	✓✓ Extensive – tuning possible per tier (compute, storage, network).	✓✓✓ Integrated – tuning available but often automated by the HCI software stack.
Cloud/ Hybrid Availability	✗ Rare – usually no native cloud integration.	✓✓ Possible via storage gateways or custom networking.	✓✓✓ Common – built-in hybrid cloud connectors and disaster recovery options.
Cost Model	✓✓✓ Lowest upfront, limited long-term flexibility.	✓✓ Higher initial cost – specialised components for each tier.	✓ Premium features via software licensing
Best Use Case	**Small workloads, testing, isolated systems.**	**Large enterprises needing maximum performance and flexibility.**	**Modern virtualised environments, VDI, edge, and cloud-like on-prem setups.**
Best For	**Labs, test/dev, edge**	**Core datacenters with storage teams**	**Mid-size, ROBO, VDI, hybrid IT**

Real-World Examples

Local Storage

- VMware ESXi Free, Proxmox or Windows Server w/ Hyper-V on standalone hardware e.g. Lenovo SR250 or SR650 with local hard drives.
- Run 2–5 VMs for basic apps, CCTV, small office workloads.
- No HA or live migration; backup essential for recovery.



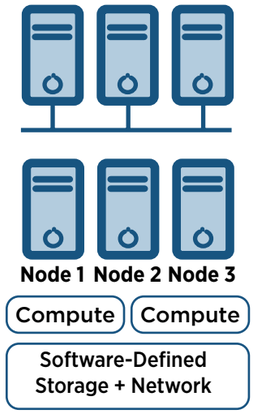


3-Tier Architecture

- VMware vSphere, Proxmox or Hyper-V cluster.
- Multiple servers for compute with shared SAN via Fibre Channel or iSCSI (e.g. Lenovo DE/DM Series).
- Use case: Mid sized organisations with higher uptime and storage need.

Hyperconverged Infrastructure (HCI)

- VMware vSAN ReadyNodes or Lenovo ThinkAgile VX (vSphere + vSAN).
- Microsoft Azure Stack HCI on Lenovo ThinkAgile MX.
- Nutanix hyperconverged solutions on Lenovo ThinkAgile HX.
- Build your Own with Proxmox and built in CEPHs storage.



When to Choose Each

Recommended Architecture	Use Case
Local Storage	Small branch, lab, edge, or isolated server
3-Tier Architecture	Core datacenter with structured IT teams
Hyperconverged Infrastructure (HCI)	Modern VMs, hybrid cloud, easy scalability

Final Thoughts

Each model has its place:

- **Local storage** is great for **budget-conscious, non-critical, or edge deployments.**
- **3-Tier** still makes sense for **large enterprises with existing SANs.**
- **HCI** is ideal for **modern, scalable, and cloud-integrated infrastructure.**

For example:

- **Lenovo SR250/SR650** is great for local deployments
- **Lenovo DE/DM Storage + SR650** supports traditional 3-tier setups
- **Lenovo ThinkAgile MX, HX or VX** is purpose-built for HCI with Microsoft, Nutanix or VMware.
- **BYO Proxmox HCI cluster with SR650 servers**

Microsoft Hyper-V & Azure Local Stack HCI

Overview

Microsoft offers two primary virtualization technologies:

- Hyper-V (built into Windows Server)
- Azure Local Stack HCI (a hyperconverged, hybrid cloud solution)

Key Features

- Native Windows/Active Directory integration
- Live migration, storage migration, failover clustering
- Integration with Microsoft Defender, Azure Arc, and hybrid cloud services
- Managed through Windows Admin Center or System Center

Pros and Cons

Pros

- Deep Windows ecosystem integration
- Flexible licensing (Datacenter and Core model)
- Azure Stack HCI integrates with hybrid tools like Azure Monitor

Cons

- Complexity at scale without System Center
- Azure Local Stack HCI requires Azure subscription for some features
- Not as platform-agnostic as other options

Pros

- Strong hardware ecosystem, especially with Lenovo ThinkAgile MX

Cons

- Expensive if licensing is required

Lenovo Integration: ThinkAgile MX

Lenovo's ThinkAgile MX series is purpose-built for Azure Stack HCI. Benefits include:

- Single vendor support
- Simplified deployment
- Full validation for Azure integration
- Customizable nodes for edge, ROBO, and core datacenter use cases

Nutanix AOS & AHV

Overview

Nutanix offers a complete hyperconverged infrastructure (HCI) solution built around the Acropolis Operating System (AOS) and AHV, its built-in KVM-based hypervisor.

Key Features

- Web-based Prism UI
- VM management, networking, storage, and backup in one stack
- Advanced data protection and disaster recovery
- Built-in Kubernetes (Karbon) and microservices support

Pros

- Turnkey HCI platform—simple to deploy and scale
- No separate hypervisor licensing (AHV is free)
- Strong automation and analytics
- Enterprise-grade performance and reliability

Cons

- Higher cost compared to Proxmox or raw Hyper-V
- Less flexibility for integrating non-Nutanix tools
- Proprietary ecosystem may not suit DIY users

Lenovo Integration: ThinkAgile HX

The **Lenovo ThinkAgile HX** series is certified for Nutanix AOS and AHV, with:

- Fully integrated hardware/software support
- One-click upgrades and monitoring
- Joint Lenovo–Nutanix support agreements
- Pre-validated node profiles for compute/storage workloads

Proxmox Virtual Environment (Proxmox VE)

Overview

Proxmox VE is an open-source virtualization platform combining KVM, LXC, ZFS storage, and a web-based management interface.

Key Features

- Cluster management and live migration
- Integrated backup and snapshots
- Support for both VMs and containers
- Open-source with enterprise support available

Pros

- Free and open source (with optional paid support)
- Lightweight and fast
- Ideal for labs, SMBs, and advanced users
- High flexibility with ZFS, Ceph, LXC, etc.

Cons

- No official Microsoft/VMware integration
- Steeper learning curve than commercial solutions with possible command line administration required
- Community support unless enterprise subscription is purchased

Lenovo Compatibility

While Lenovo doesn't offer Proxmox-certified systems, most ThinkSystem and ThinkAgile hardware (including SR-series rack servers) are fully compatible and tested. Many Proxmox deployments run on Lenovo servers with excellent performance, especially using RAID or ZFS storage.

Choosing the Right Platform - Summary

When to Choose Microsoft

- You're a Windows-centric shop
- You need hybrid cloud (Azure) capabilities
- You already use Windows Server licensing

When to Choose Nutanix

- You want a true all-in-one HCI experience with advanced functions
- You're replacing aging VMware clusters with advanced functions
- You prefer strong vendor support

When to Choose Proxmox

- You're cost-conscious or DIY-oriented
- You value open source and flexibility
- You're running edge, lab, or SMB workloads

Feature Comparison Table

Virtualization Platform Comparison

Feature / Platform	VMware vSphere	Nutanix AHV	Microsoft Hyper-V	Proxmox VE
Core Hypervisor	ESXi	AHV (based on KVM)	Hyper-V (Windows-based)	KVM/QEMU
Architecture	Standalone, 3 Tier and HCI	HCI	Standalone, 3 Tier and HCI	Standalone, 3 Tier and HCI
Lenovo Integrated Solutions	ThinkAgile VX	ThinkAgile HX	ThinkAgile MX	Tested on hardware only
Management Interface	vCenter	Prism Central / Element	SCVMM / Windows Admin Center	Web GUI / CLI
Container Support	HCI only	Yes, addon	HCI	Yes
License Model	Subscription only (core-based)	Bundled with Nutanix appliances	Included in Windows Server / Azure. Licences for Azure Local	Free + optional support
HCI Integration	vSAN	Native Nutanix HCI	Storage Spaces Direct (S2D)	Built-in Ceph/ ZFS options
Live VM Migration	vMotion	Yes (Cross-node, Storage)	Live Migration	Yes

Feature / Platform	VMware vSphere	Nutanix AHV	Microsoft Hyper-V	Proxmox VE
Backup & Snapshot support	Native + 3rd party (Veeam)	Native + 3rd party (HYCU, Veeam)	Native + 3rd party	Built-in snapshot, Proxmox Backup
GPU Passthrough / vGPU	Yes (NVIDIA GRID, vGPU)	Yes (with NVIDIA vGPU + configs)	Yes (Discreet Device Assignment)	Yes (Passthrough, vGPU via hooks)
Windows Licensing Impact	If required for VMs	If required for VMs	Needs Windows Datacenter/Std	If required for VMs
Cloud/Hybrid Integration	VMware Cloud (AWS, Azure)	Nutanix Cloud Clusters (NC2)	Azure Stack HCI	Limited, community-driven tools
Automation & APIs	vRealize, PowerCLI, REST	REST APIs, Calm (for orchestration)	PowerShell, WMI, Azure APIs	REST API, Ansible support
Ease of Use	Advanced UI, but complex	Very user-friendly (Prism UI)	Familiar to Windows admins	Lightweight, intuitive UI. May need CLI
Open Source	✗ Proprietary	✗ Proprietary	✗ Proprietary	✓ Fully Open Source
Best Fit For	Enterprises, regulated orgs	HCI-focused orgs, mid/large biz	Windows shops, hybrid Azure users	SMBs, labs, budget-sensitive IT

16 Point Checklist to Assist with Evaluation

#	Item	Description	Notes
1	Budget Restrictions (Hardware and Licensing)	What is the total cost of ownership (TCO), including licensing, support, and hardware? Over 3/5/7 years? Are there free or community-supported options?	
2	Feature Requirements	Does the platform support the core virtualization features you need (e.g., HA, vMotion/live migration, snapshots, clustering)?	
3	Advanced Features	Do you require advanced features at the hypervisor layer? E.g. stretch clusters, orchestration, Kubernetes?	
4	Workload Compatibility	Are all your current guest OSes (Windows/Linux variants) supported? Can legacy workloads run without issues?	
5	Performance and Scale	Can the platform scale with your projected growth? How easy and what costs are involved? How does it handle performance under peak load?	
6	Storage Architecture	Is storage handled via SAN/NAS, software-defined storage (HCI), or local disks? Is it flexible enough to match your existing investment?	
7	Management Tools	Is the management interface intuitive and efficient? Do you have the skills internally for the platform? Are CLI, REST APIs, and automation tools required and available?	
8	Backup & DR Integration	Is it compatible with your existing backup and disaster recovery systems (e.g., Veeam, Commvault etc)? What built-in snapshot or replication options are available?	
9	Other 3rd Party Integration	Are monitoring, security, automation, and backup tools compatible? Does the platform integrate well with your current tool stack?	
10	Support for Containers & Modern Apps	Does the platform natively support containers (Kubernetes, Docker)?	
11	Cloud Connectivity	Is it cloud-native or hybrid-cloud ready? Does it fir with your Cloud (or Hybrid) Strategy?	
12	Migration Complexity	How easily can VMs be migrated from VMware to the new platform? Are tools or services available for lift-and-shift?	
13	Vendor Support & Community	Is enterprise-grade support available? Is there an active user community or vendor knowledge base?	
14	Networking Features	Do you require advanced networking (VLANs, overlays, virtual switches, NSX-equivalent)?	
15	Licensing Flexibility	Is licensing per-core, per-socket, or per-host? Is perpetual licensing an option, or only subscription? What are the costs to expand?	
16	Future Viability & Roadmap	Is the platform actively developed and innovating? Is it backed by a stable vendor with a clear roadmap?	

Final Thoughts

VMware's market shift is creating real opportunity for end users to rethink virtualization strategy. Whether you want full HCI, hybrid cloud, or open-source control, viable alternatives are ready — and Lenovo offers world-class hardware platforms to support them all.

For example:

- **ThinkAgile MX** with Azure Local Stack HCI offers hybrid simplicity.
- **ThinkAgile HX** brings Nutanix's powerful HCI stack to the datacenter.
- **ThinkSystem servers** provide flexible hardware for Proxmox or Hyper-V DIY deployments.

Now is the time to evaluate, plan, and take control of your virtualization future.

Let's Build Your Virtualization Strategy
Backed by Real Data

Choosing the right virtualization platform is no longer just a technical decision, it is a strategic one. At **Focus Group Technologies**, we help you cut through complexity by combining hands-on expertise with data-driven insights. Whether you are reconsidering **VMware** after recent licensing changes or exploring alternatives like **Nutanix AHV**, **Microsoft Hyper-V**, or **Proxmox VE**, we guide you through a tailored evaluation process to find the best fit for your current and future workloads.

A key part of our approach is using **OneIQ**, an advanced workload and infrastructure analytics tool that gives us deep visibility into your environment. **OneIQ** automatically discovers your existing compute, storage, and network usage patterns, identifies under or over-utilized assets, and maps interdependencies between systems. This insight allows us to accurately model how your workloads would perform on alternative platforms, including potential savings, resource requirements, and migration complexity. Instead of guesswork, you are getting evidence-based recommendations backed by real performance and usage data.

With **Focus Group Technologies** and **OneIQ**, you are not just comparing virtualization platforms, you are building a strategy grounded in facts. Whether you are planning a full migration, a hybrid approach, or just need to validate your current investment, we provide the technical and business clarity to move forward with confidence.

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