

Multi-Vendor Hyperconverged Infrastructure with Lenovo ThinkAgile FX V4

Solution Brief

Hyperconverged infrastructure earned its place by collapsing compute, storage, and management into one system that a small team can run. The architecture is settled. What is no longer settled is the software layer on top of it.

Consolidation among hyperconverged software vendors has prompted a broad re-examination of platform commitments. Industry surveys published through 2025 report that the overwhelming majority of IT leaders are concerned about the direction of their current virtualization platform, that roughly three quarters of enterprises are actively evaluating alternatives including Nutanix, Hyper-V, and Kubernetes, and that transition plans are being drawn on three to five year horizons rather than executed overnight.

That timeline is the important detail. Most organizations are not switching platforms immediately; they are trying to avoid making a hardware purchase today that removes the option to switch later. Lenovo ThinkAgile FX V4 Series is built specifically for that position.



Figure 1. ThinkAgile FX650 V4 (top) and FX630 V4 (bottom) designed for flexible hyperconverged infrastructure

Business Challenge

Hyperconverged appliances have traditionally been sold as a single bonded stack, with the hardware certified to one vendor's software for the life of the asset. That coupling produces three recurring problems:

- **Managing multiple ISV stacks:** Organizations that have acquired businesses, hedged their bets, or standardized differently by region end up operating parallel hyperconverged estates, each with its own appliance family, firmware baseline, support contract, and operational runbook.
- **Unpredictable cost structures:** When hyperconverged software licensing terms change, an infrastructure budget set years earlier can move substantially, and hardware certified to a single vendor gives the organization no commercial response.

- **Hardware that cannot be repurposed:** Moving to a different hyperconverged stack has generally meant buying new appliances, building a parallel environment, and migrating workload by workload, because the incumbent hardware was never validated for the target software.

Underneath all three is the same issue. The platform decision and the hardware decision have been welded together, so a change to either one forces a change to both. Infrastructure teams need those decisions decoupled, without giving up the integration and single-vendor support that made appliances attractive in the first place.

Solution

Lenovo ThinkAgile FX V4 Series is the only hyperconverged appliance that supports multiple ISV software stacks on the same system. One FX V4 platform runs VMware vSphere with vSAN, Nutanix AOS with AHV, or Microsoft Azure Local and Windows Server with Hyper-V, and Lenovo provides a defined service path to move an installed cluster from one to another.

Platform

The series comprises two 2-socket, rack-optimized models built on Lenovo ThinkSystem servers with Intel Xeon 6 processors:

- **Lenovo ThinkAgile FX630 V4:** A 1U system for density-oriented and space-constrained sites.
- **Lenovo ThinkAgile FX650 V4:** A 2U system providing up to 86 cores and PCIe 5.0 connectivity, with capacity for GPUs and larger flash configurations.

Both models offer all-NVMe flash from 1.6 TB to 15.36 TB per drive, 10, 25, and 100 GbE networking, NVIDIA L4 and L40S GPU options, and UEFI Secure Boot.

Deployment and lifecycle

Four Lenovo capabilities carry the appliance experience across the system's life:

- **Factory preinstall:** Systems arrive preconfigured with the chosen software stack already loaded and hardware and software compatibility confirmed before delivery.
- **Lenovo Best Recipes:** Validated blueprints that lock Lenovo hardware, firmware, drivers, and ISV software to a single tested combination, certified jointly by Lenovo and ISV engineers. When a cluster is built, the deployment tool for the chosen stack (Nutanix Foundation, the VMware Cloud Foundation installer, or the Lenovo Solution Builder Extension for Microsoft Azure Local) applies that blueprint, so every node goes live on identical tested versions rather than on whatever shipped in the box. The same blueprint then governs updates: the cluster is checked against its current Best Recipe, any node that has fallen out of step is identified, and a single action brings the cluster back in line, applying firmware, drivers, hypervisor, and management software in the required order. Lenovo XClarity performs that check for the Nutanix and VMware stacks; Microsoft deployments use the Solution Builder Extension in the Azure portal.
- **Single-pane operations:** Administrators work in the console they already use, Nutanix Prism, VMware vCenter, or the Azure portal for Azure Local, with Lenovo XClarity hardware data integrated directly inside it.
- **Lenovo Premier Support:** One point of contact for hardware and integrated software, replacing the referral chain between hardware and software vendors.

Use Cases

The value of a neutral appliance shows up differently depending on where an organization sits in its platform cycle. Some are mid-transition and need to act on hardware they already own. Some are carrying two or three hyperconverged estates and want to stop duplicating operational effort. Others are buying for locations where no one on site can perform a build. The following scenarios describe how ThinkAgile FX V4 is applied in each case.

- **Changing hyperconverged stacks on installed hardware**

An organization has decided to move to a different hyperconverged platform but has appliances only part way through their depreciation. On FX V4, that becomes a services engagement rather than a hardware purchase. Lenovo Professional Services performs upfront compatibility validation, tears down the existing cluster, and deploys the target ISV stack on the same systems. Migration of workloads to and from a secondary environment before and after conversion is offered as an optional scoped service. Lenovo recommends a single conversion, performed within three years of the original FX purchase.

- **Standardizing a mixed-stack estate**

Enterprises running VMware in one division and Nutanix in another maintain two appliance families, two firmware processes, and two support relationships. Standardizing new purchases on FX V4 lets both stacks run on one hardware platform with one Best Recipe process, one XClarity view of hardware health, and one Premier Support contract. The software estates stay separate where the business needs them separate; the infrastructure underneath them converges.

- **Distributed sites and remote offices**

Branches, clinics, and plant floors need local compute, central oversight, and little or no on-site IT presence. The 1U FX630 V4 fits constrained racks, factory preinstall removes the build work that would otherwise happen at each location, and Best Recipes keep firmware and driver levels consistent across dozens of sites so that update sequencing never has to be worked out locally.

Workloads

ThinkAgile FX V4 targets the general-purpose and mission-critical workloads that justify consolidation onto a shared, scale-out platform:

- **Server virtualization and private cloud:** Mixed virtual machine estates on VMware vSphere with vSAN, Nutanix AOS with AHV, or Microsoft Azure Local and Windows Server with Hyper-V.
- **Databases:** Lenovo has published implementation guidance for Microsoft SQL Server 2025 and for MongoDB on ThinkAgile FX V4 with Intel Xeon 6 processors, covering both the Nutanix stack and VMware Cloud Foundation 9.0 with vSAN ESA.
- **Virtual desktop infrastructure:** Desktop and application virtualization, with NVIDIA L4 and L40S GPUs available for graphics-oriented user profiles.
- **AI inferencing:** Intel Advanced Matrix Extensions in the Xeon 6 processors support fine tuning and inferencing on the CPUs already in the cluster, with L4 and L40S GPUs available where a workload requires acceleration.

Lifecycle tooling follows the chosen stack: Nutanix LCM, vLCM within vCenter, or Microsoft LCM in the Azure portal, each aligned to the corresponding Lenovo Best Recipe. Node counts, flash capacity, and memory profiles should be sized with a Lenovo representative, since the supported stacks size differently for the same workload.

Business Outcome

The headline outcome is that the hyperconverged software decision stops being permanent. Because one appliance supports three ISV stacks and Lenovo provides a validated conversion path, a change of platform no longer requires a capital cycle, a parallel build, or the write-off of serviceable hardware.

The operational outcomes follow from factory integration and validated baselines:

- **Faster cluster deployment:** Factory preinstall and automated configuration bring every node to a validated running state without on-site build work, so a cluster reaches production sooner than a manually assembled equivalent.
- **Fewer update failures:** Best Recipes remove guesswork from update sequencing and prevent version drift across clusters, so upgrades are predictable rather than exploratory.
- **Less engineering time on validation:** Lenovo and its ISV partners test the firmware, driver, and software combinations, which is work the infrastructure team would otherwise carry.
- **Faster problem resolution:** Lenovo Premier Support provides a single point of accountability for hardware and integrated software.
- **Predictable expansion:** Capacity grows a node at a time, so scaling is incremental rather than a large step change.

Lenovo has not published benchmark or TCO figures for the FX V4 Series as a whole. For deployment, conversion, and sizing estimates against a specific configuration, contact your Lenovo representative.

Conclusion

Infrastructure teams are being asked to commit capital to platforms whose commercial terms and roadmaps are visibly in motion. Lenovo ThinkAgile FX V4 Series answers that by making the appliance neutral. The same factory-integrated system, built on Lenovo ThinkSystem servers with Intel Xeon 6 processors, runs VMware, Nutanix, or Microsoft hyperconverged software, and Lenovo Professional Services can move an installed cluster from one to another. Organizations get the simplicity of an appliance, the operational discipline of validated Best Recipes and single-pane management, and a platform decision that stays open.

For More Information

To learn more about Lenovo ThinkAgile FX V4 Series and the multi-vendor HCI conversion service, contact your Lenovo representative or Lenovo Business Partner, or visit the resources below.

References:

- Lenovo ThinkAgile FX650 V4 Hyperconverged System Product Guide:
<https://lenovopress.lenovo.com/lp2338-lenovo-thinkagile-fx650-v4-hyperconverged-system>
- Lenovo ThinkAgile FX630 V4 Hyperconverged System Product Guide:
<https://lenovopress.lenovo.com/lp2337-lenovo-thinkagile-fx630-v4-hyperconverged-system>
- Running SQL Server 2025 on Lenovo ThinkAgile HX V4 and FX V4 Servers with Intel Xeon 6 Processors:
<https://lenovopress.lenovo.com/lp2457-running-sql-server-2025-on-lenovo-thinkagile-hx-v4-and-fx-v4-servers>
- MongoDB on Lenovo ThinkAgile VX V4 and FX V4 with VMware Cloud Foundation 9.0 and vSAN ESA:
<https://lenovopress.lenovo.com/lp2411-mongodb-on-lenovo-thinkagile-vx-v4-and-fx-v4>

- Deploy and Scale Generative AI in Enterprises with Intel AMX and Lenovo ThinkAgile HX V4 and FX V4:
<https://lenovopress.lenovo.com/lp2362-genai-with-thinkagile-hx-v4-and-fx-v4>
- Lenovo Press: ThinkAgile FX Series:
<https://lenovopress.lenovo.com/servers/thinkagile/fx-series>

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Related product families

Product families related to this document are the following:

- [ThinkAgile FX Series](#)

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