

Lenovo Client Virtualization Solutions for VMware Horizon

Lenovo™

Provide end users access to their virtual desktops and apps through a single digital workspace

Meeting the Needs of the Mobile Workforce

Industries as diverse as healthcare, finance, government, retail, and education have the common requirement to support and secure a mobile workforce. Organizations often have a dispersed workforce using many PCs, laptops, and mobile devices distributed to field offices and remote locations. Client virtualization is a powerful solution to meet the need for flexibility and global availability of compute resources, while managing data security and compliance on mobile devices.

The Lenovo Client Virtualization Solutions for VMware Horizon help your organization meet these business requirements by centrally managing the desktop image within the corporate IT environment rather than at the remote worker or office location. With user data, user profiles and application data files on centralized servers, data center security and manageability are extended down to the user resources. Users have anywhere, anytime, secure access to data and applications from any device, including tablets and smartphones.

Deliver Secure Desktops While Cutting IT Costs

VMware Horizon provides a streamlined approach to deliver, protect, and manage Windows and Linux desktops and apps while containing costs. It supports a consistently rich end user experience for knowledge workers, mobile workers and even 3D developers across devices, locations, media and connections.

Horizon is tightly integrated with VMware's Software-Defined Data Center, which includes vSphere, vSAN and NSX. This integration provides a seamless turnkey solution, allowing IT to dynamically allocate resources with virtual storage, virtual compute and virtual networking to simplify management and drive down costs.

Reduce day-to-day operations costs with a single platform that allows you to extend virtualization from the data center to your devices. A unified version of all software across your desktops provides maintenance and services savings, and unauthorized downloads of software or malware are prevented with controlled boot images.

Highlights

- Transforms static desktops into secure, digital workspaces that can be delivered on demand
- Enables a scalable solution for a few hundred to several thousand users to meet current and future needs
- Supports a wide variety of VDI usage models from typical office users all the way up to high-end 3D rendering power users

Simplify Solutions Infrastructure with ThinkAgile HX

Vmware Horizon has been certified on several Lenovo servers, including the Lenovo ThinkAgile HX Series. ThinkAgile HX Series are hyperconverged servers with compute, storage and virtualization co-located on a single node. The HX Series enables you to dramatically simplify your server, storage and virtualization deployments and pool your resources into a single virtualized infrastructure for more flexible and efficient utilization and management.

The HX Series scales rapidly to meet the growing needs of your business with the patented Nutanix Acropolis Distributed Storage Fabric. Start small with initial deployments for one hundred end users or less and linearly scale to tens of thousands of users without additional performance overhead, or complex management.

Powered by Lenovo

Reference architectures also exist for the following Lenovo ThinkSystem servers:

- SR630 – A 1U, 2-socket server that provides extensive flexibility to fit almost any customer environment
- SR650 - A 2U, 2-socket server that provides extensive flexibility along with large memory and vast storage capacity
- SD530 - A dense 2U configuration that supports up to four 2-socket servers.
- SN550 - A compute node that is part of the Flex System blade server. Flex System allows for the pooling of system resources including power, cabling, management, networking, and cooling.

All Lenovo ThinkSystem servers are high performance systems, consistently holding numerous world performance benchmarks. Engineered for always-on productivity, ThinkSystem servers are consistently ranked #1 in x86 server customer satisfaction¹ and #1 in x86 server reliability².



Lenovo ThinkAgile HX, ThinkSystem SR630, ThinkSystem SR650, ThinkSystem SD530, and ThinkSystem Flex System Chassis

Complementary Hardware

All configurations support on-board storage, and the SR- and SD- systems support attached storage with the Lenovo ThinkSystem DE or DM series storage arrays. These all-flash and hybrid arrays offer a range of connectivity options, minimizing latency and maximizing performance.

Connecting the servers to the storage in this solution can be easily accomplished with network switches from the Lenovo RackSwitch portfolio. The recommended offerings for this solution are the NE0152T, a 52 port 1GbE switch for knowledge workers, and the NE1032, a 32 port 10GbE switch for workers utilizing heavy graphics applications like CAD/CAM and AI model rendering.

Complementary Software

Lenovo offers a wide range of complementary software offerings for your VMware Horizon environments.

Data can be backed up with Veeam® Availability Suite™. Veeam Agents for Microsoft Windows and Linux work with Veeam Availability Suite to deliver comprehensive backup and recovery for ALL workloads — virtual, physical and cloud — with a single management console.



Sukhoi Civil Aircraft virtualized all 1,400 desktops using VMware Horizon. Now, the company can manage all virtualized resources centrally and keep a tighter control on security.

The delivery of graphics-rich desktops and workstations is facilitated by NVIDIA® virtual GPU (vGPU) software in conjunction with NVIDIA GPUs. Today's digital worker requires more graphics-intensive applications and operating systems to be productive. Windows 10 provides a rich, immersive experience and is the most graphically intensive operating system to date. NVIDIA GRID vGPU software is designed to deliver Windows desktops and applications at full performance while NVIDIA Quadro vGPU software allows users to access their professional graphics applications with full features and performance from any device, anywhere.

Lenovo XClarity™ Administrator is a centralized resource management solution that is aimed at reducing complexity, speeding response, and enhancing the availability of Lenovo server systems and solutions. It captures industry-leading proactive platform alerts, enabling administrators to migrate workloads or replace failing components without incurring downtime.

XClarity Administrator enjoys tight integration with VMware vCenter through the XClarity Integrator for VMware vCenter. Administrators can view, monitor, and manage Lenovo infrastructure from the vCenter management console and vSphere web client. The XClarity Integrator for VMware vCenter also speeds Day 1 provisioning of new Lenovo systems into production, simplifies ongoing administration, and increases workload uptime in clustered environments by eliminating system maintenance windows and dynamically initiating workload migration based on user-defined system events.

End-to-End VDI Solution

Completing the Lenovo end-to-end client virtualization solution for VMware environments are the endpoints. From devices to desktops, Lenovo helps businesses access the data needed to make informed decisions. Lenovo offers a wide range of PCs, tablets, thin clients and smartphones for end user access. The portability, versatility and lightweight features of Lenovo thin clients allow for deployment across the organization, especially where space is at a premium.

Lenovo streamlines device deployment and management with Lenovo Terminal Manager (LTM™). LTM is a browser-based solution for managing groups of thin clients. Whether you operate in a simple or complex environment, you can streamline the management of multiple hosted desktops all from one place. LTM's web-based console allows IT administrators to freely access it from any device that can connect to the server, as well as pushing through certificates and software packages. LTM also simplifies the ability to rapidly deploy additional devices, scaling to thousands of connected devices.

Tying It All Together

In today's rapidly-changing technology environment, empowering your data center transformation isn't just a necessity—it's also a journey. Regardless of your current environment, Lenovo Services is a true business partner that will take you from where you are, to where you want to be. At every stage, you'll get our expertise and services to help you:

- **Drive Digital Transformation.** You'll get the best architectures suited to your unique needs, along with our industry insights, expert guidance, and hands-on experience.
- **Foster Innovation.** Free up your internal resources to focus on initiatives that grow your business.
- **Simplify Your Support Experience.** Gain a trusted partner who understands your systems and solutions to fully support and optimize your data center.

When VMware Horizon is implemented on ThinkAgile HX Series, Lenovo Services guarantees a superior service experience. Providing outstanding value while supporting your uptime requirements, we offer choices to match your workload requirements ranging from base warranty extensions to same-day committed repair, as well as hard drive retention, installation and customized service options. Investing in Lenovo Services guarantees genuine Lenovo quality parts, as well as reliable and consistent service from highly skilled, trained and certified technicians, with access to our global remote and field support teams.



“The Lenovo solution enables us to offer easy, reliable access to virtual desktops equipped with everything kids need for their studies.”

— Wayne Steffan, System Administrator, Carlsbad Municipal School District

Lenovo provides a complete end-to-end VMware VDI offering with end points, servers, software and services



Why Lenovo

Lenovo is a leading provider of x86 servers for the data center. Featuring rack, tower, blade, dense and converged systems, the Lenovo server portfolio provides excellent performance, reliability and security. Lenovo also offers a full range of networking, storage, software, solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

For More Information

To learn more about Lenovo solutions for VMware Horizon, contact your Lenovo sales representative or Business Partner or visit:

www.lenovo.com/systems/solutions

Other Resources:

Design Briefs -

[Lenovo Validated Design for VMware Horizon with VMware vSAN](#)

[Lenovo Validated Design for VMware Horizon – ThinkAgile HX](#)

Reference Architectures -

[Lenovo Validated Design for VMware Horizon with VMware vSAN](#)

[Lenovo Validated Design for VMware Horizon – ThinkAgile HX](#)

Case Studies – www.lenovosuccess.com

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