

Lenovo Client Virtualization Reference Architecture for VMware Horizon

Securely Delivering Global Access and Reducing Operational Cost

Maximize the Benefits of a Lenovo Infrastructure with Client Virtualization

Today's business and IT leaders know that a client virtualization solution can help their organization meet multiple challenges, including ever-rising IT costs, managing data security and compliance on mobile devices, increased complexity of maintaining remote client devices, and the need for flexibility and global availability of compute resources.

The Lenovo Client Virtualization solution for VMware Horizon helps 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.

The combination of Lenovo Client Virtualization and VMware Horizon with View provides a flexible client virtualization solution that helps minimize complexity, improve user productivity and reduce costs.

A complete, validated solution

Lenovo offers a complete, validated client virtualization solution for VMware Horizon with View. This solution is continuously updated with the latest-generation Intel Xeon processors, new VMware vSphere features and leading-edge graphics cards for accelerating applications that require GPUs.

VMware Horizon delivers multiple advantages for organizations implementing Lenovo Client Virtualization, including choice of delivery with support for private cloud and cloud-hosted services, as well as comprehensive image management across combinations of virtual, physical and bring-your-devices (BYOD). Hybrid delivery through Horizon Desktop as a Service (DaaS) provides organizations with choice when it comes to services for end users. VMware's closed-loop management and optimization for the software defined data center enables organizations to truly extend the power of virtualization from the data center to devices. The Lenovo solution for VMware consists of the following components:

- Server: Lenovo Rack Servers and Flex System servers
- Storage: Lenovo SAN-attached, converged storage and hyper-converged storage
- Networking: Lenovo Ethernet networking and Brocade Fibre Channel SAN
- Clients: Lenovo workstations, thin clients, laptops, tablets and mobile devices
- Hypervisor: VMware ESXi

HIGHLIGHTS

- A validated solution for VMware Horizon
- Definitive and thorough reference architecture for quick time to value
- Complete end-to-end Lenovo infrastructure offering
- Powered by proven Lenovo Rack Servers and Flex System servers
- Hyper-converged storage option with VMware VSAN



ARCHITECTURE BRIEF

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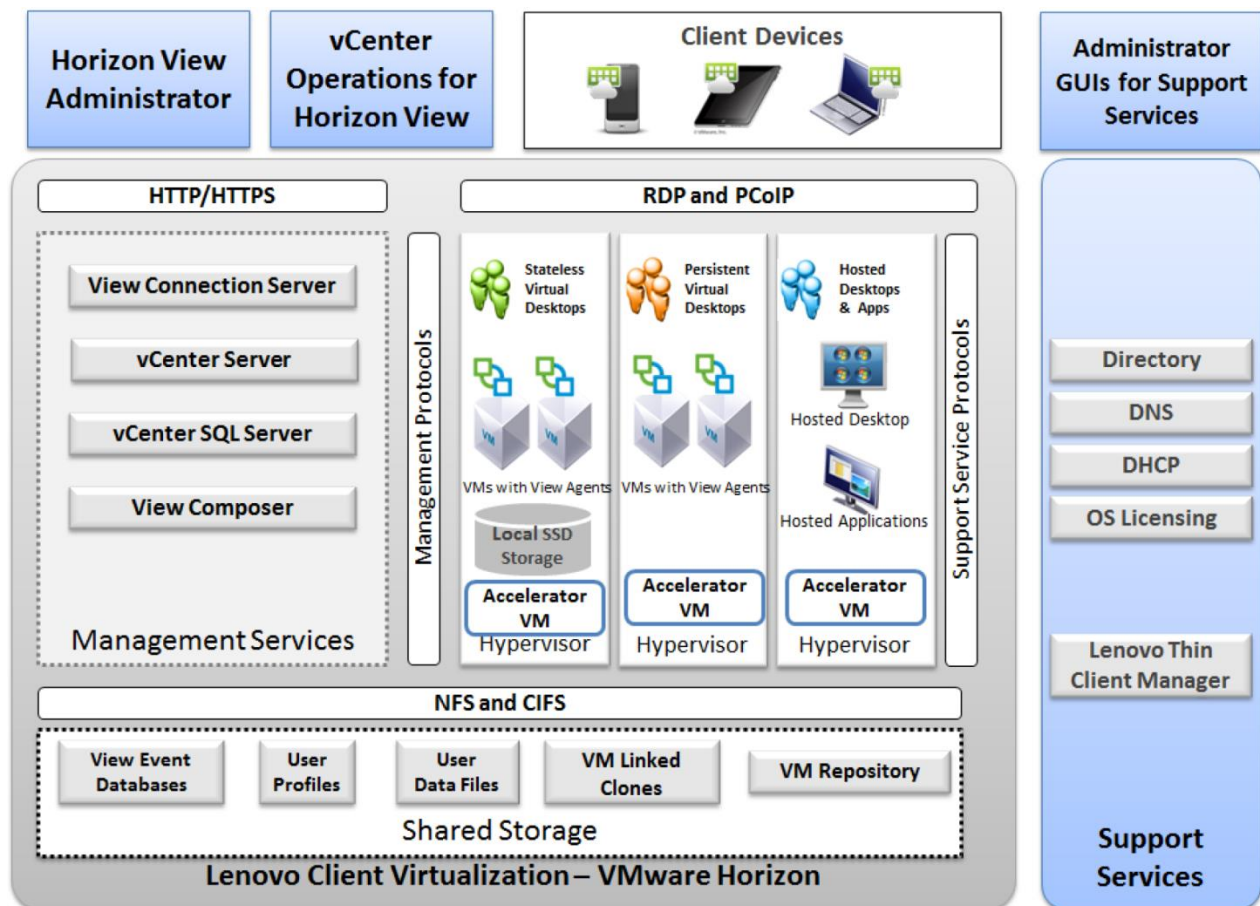
Options for matching the solution to the need

The key to a successful client virtualization deployment depends largely on matching the solution to your organization's workload requirements. Running VMware Horizon on industry-standard x86 servers from Lenovo helps reduce costs and gives you the flexibility to choose configurations. The Lenovo and VMware reference architecture offers an array of infrastructure choices for general-purpose workloads, accelerated graphics workloads, hyper-converged solutions and shared storage deployments.

Powering general-purpose workloads

To fuel workloads for mainstream enterprise users, a powerful and efficient solution is VMware Horizon on a choice of System x3550 M5 and System x3650 M5 Rack Servers and dense Flex System x240 M5 offerings. Lenovo's general-purpose servers offer memory capacity up to 768 GB. They also include an exclusive set of Lenovo server security features and practices that protect data centers from low-level malware attacks, enabling customers to minimize risk and costs to their data centers.

The System x3550 M5 is a compact, versatile 1U two-socket rack server that provides leadership security, efficiency and reliability. Integrated with up to two latest-generation Intel Xeon processors, the x3550 M5 delivers exceptional performance. Storage can include up to 12 drives in a selection of sizes and types.



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With the 2U System x3650 M5 rack server, your organization can run even more workloads, with availability when you need it. The x3650 M5 is integrated with the latest-generation Intel Xeon processors and provides industry-leading, two-socket storage capacity. It can include up to 26 drive bays to optimize diverse workloads. It also supports up to two NVIDIA GRID graphics acceleration cards.

For greater density requirements, Flex System infrastructure features the next generation of blade technology. As a converged system, Flex System offers excellent integration of solution elements, and low latency through the mid-plane for improved performance. The Flex System Enterprise Chassis is the foundation of the Flex System offering, which features 14 compute node bays in a 10 U chassis that delivers high-performance connectivity for integrated compute, storage, network and management resources.

Flex System provides the efficiency you need now along with a growth path for the future. Its flexible design can be fully customized to the specific needs of the computing environment and supports independently scalable IT resource pools. The Flex System x240 M5 compute node delivers maximum performance for a broad set of workloads.

Boosting performance of shared storage

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Helping to ensure client virtualization project success

Selecting from a wide array of front-end and back-end infrastructure options, you can deploy a solution that meets IT requirements for low cost and manageability, as well as user expectations for speed of logon time, application launch time and overall desktop response. By delivering performance on par or better than traditional PCs, the solution becomes essentially invisible to the user.

Lenovo Client Virtualization for VMware Horizon is designed to help reduce project risk whether you are starting with a single departmental deployment or a implementing a company-wide initiative.

Workload-based infrastructure at a glance

Lenovo enables your organization to optimize infrastructure for any workload.

- General-purpose workloads: VMware Horizon on System x3550 M5 and System x3650 M5 rack servers, and dense Flex System x240 M5 offerings
- V3700 V2 SAN storage system supports up to 240 drives by using up to 9 expansion enclosures
- The Lenovo RackSwitch™ G8124E, and G8272 TOR Gigabit Ethernet switches provide connectivity between compute nodes

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Why Lenovo

Lenovo is a leading provider of x86 servers for the data center. Featuring rack, tower, blade, dense and converged systems, and 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. With options for planning, deployment, and support, Lenovo offers expertise and services needed to deliver better service-level agreements and generate greater end-user satisfaction.

For More Information

To learn more about the Lenovo Cloud Reference Architecture for VMware Software Defined Data Center, contact your Lenovo Business Partner or visit:

lenovo.com/systems/solutions.

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