



# Which Agile Solution is Right for You?

The New SMARTER Normal

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## Overview

As the world adapts to the “new normal” way of doing business, organizations of all types, large and small, must find new and better ways to conduct operations. You need tighter, more efficient solutions that enable you to do more with less and yet somehow do it better and faster. To help you do so, Lenovo offers a number of pre-engineered, preconfigured, optimized, and customizable solutions to simplify and streamline your business like never before.

Welcome to the new, *smarter* normal.

The new data economy calls for smarter, more accessible technology. This, in turn, requires a new approach to collecting, managing, sharing, and distilling insights from data that empowers organizations of every scale, everywhere on earth. Whether you’re looking for a solution optimized for SAP HANA on **VMware vSAN** environment. or VDI workloads on **Nutanix**, or enterprise virtualized applications on **Microsoft Azure Stack**, Lenovo offers state-of-the-art solutions designed to greatly cut costs, increase your IT agility and resiliency, and free up the time you need to strategize and modernize your business so you can wow your customers (both internal and external).

On 3 September 2020, Lenovo announced a major expansion of the ThinkAgile solution portfolio, adding:

- A new **HX Series Appliance** (HX3375) and a **Certified Node** (HX3376), both built around second-generation AMD EPYC processors
- Two new **MX Series Appliances** (MX1020 and MX3520), preloaded with, and optimized for, **Microsoft Azure HCI**
- A new 4U, 4-socket **VX Series Certified Node** (VX7820), preloaded with and optimized for **SAP HANA** in a **VMware** vSphere/vSAN environment
- Plus, the (non-ThinkAgile) **Diamanti SR630 Appliance** for **Kubernetes** environments provides extreme resiliency

Each solution offers exceptional features and capabilities for specific workloads, however there is enough overlap between solutions that in many cases more than one offering may meet your needs. The question, then, is which solution is the *best* fit for you? To help answer that question, this paper highlights the primary advantages of each solution.

We understand that not all customers are the same and that each one has a unique set of requirements. Because of that we know one generic solution cannot adequately meet all needs. Rather than force-fitting one generic HCI solution into all HCI environments, every ThinkAgile solution is custom-designed and optimized to address specific customer workload requirements. Only Lenovo has developed the breadth



of ISV partnerships to deliver the right solutions for the applications our customers are using today. This differentiates Lenovo ThinkAgile from other HCI solutions.

Here's what makes our solutions so special:

- **Proven and ready-to-deploy cloud solutions** — Your solution will be preconfigured and assembled in our facility, installed in a rack, tested, and delivered directly to your site. Once there, the solution can be plugged in, turned on, and you should be up and running in *hours*, not days or weeks.
- **Flexible Solution Options: Appliances and Certified Nodes** — We understand that you can't be an expert in everything. Sometimes all you need is an additional node; you can do the rest. But sometimes a solution is outside your area of expertise and you need *everything*: hardware, software, services, perhaps even someone to manage the whole thing for you. We can do any or all of that. ThinkAgile solutions are available as appliances and as certified nodes. Appliances come complete with the operating environment and licensed software preloaded and optimized for that solution's workloads, along with Lenovo white glove deployment services and ThinkAgile Advantage single-point-of-contact. If you already have paid software licenses and don't need deployment services, certified nodes employ the same validated hardware and operating environment, but without the rest, to save you money.
- **Built in premium support** — All ThinkAgile solutions come with ThinkAgile Advantage support<sup>1</sup>, which means a team of Lenovo experts dedicated to ThinkAgile solutions. Their job is to ensure the installation is optimized for the needs of your workloads, as well as your business. Because all hardware, software, and device drivers used in that solution are preinstalled and pretested, we'll take ownership of any support issues that may arise. We provide end-to-end support, from start-to-finish and give you a single point of contact.<sup>2</sup>
- **Industry Leading Reliability** — All ThinkAgile solutions are built on the industry-leading ThinkSystem server platform, which has been ranked the [#1 most reliable](#) x86 servers in the industry for 7 straight years. In addition, ThinkSystem servers hold [nearly 200 current performance world records](#) on industry benchmarks. (To put this into perspective, no one else holds even 50 world records.) This marriage of speed and reliability, along with Professional Services, is the reason Lenovo servers are used by [180 of the world's Top500](#) supercomputing installations. *That's more than the total of the next seven server vendors combined.*
- **Simple Lifecycle Management** — ThinkAgile solutions include our Lenovo XClarity integrated system software which provides a single point of management across the hardware and software

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<sup>1</sup> The Diamanti SR630 solution is built using Lenovo hardware, but is not part of the ThinkAgile portfolio. Customers of this solution should contact Diamanti for support.

<sup>2</sup> We *may* enlist the assistance of vendor experts regarding their applications, but we will own the responsibility for getting issues resolved to your satisfaction.

stack, because XClarity is optimized for and integrated with Nutanix Prism, VMware vSphere, and Microsoft Admin Center, to greatly simplify managing the overall solution.

- **Cloud Lifecycle Services** — Each solution includes a package of consultative services, installation services, and support services provided by Lenovo Professional Services consultants. They will work with you to craft the ideal solution for your environment. The services provided are specific to each solution, although similar in scope across all platforms. Additional optional services are available as well, including implementation services, managed services, asset recovery, and many others.
- **TruScale consumption pricing** — TruScale Infrastructure Services is Hardware-as-a-Service (HaaS). Like electricity, you pay only for what you use, when you use it. But unlike public cloud, all the hardware and all of your data stays in your datacenter. You have all of the control and security of on-premises and flexibility similar to that of public cloud. With consumption-based pricing, if you use more resources, you pay more; use less and you pay less. What could be simpler? If you have a seasonal business, TruScale would be ideal.

## ThinkAgile VX Series Appliance

ThinkAgile VX solutions, including preloaded and optimized VMware ESXi and vSAN, are designed and tuned for a range of hyperconverged and hybrid cloud workloads. If you have an existing VMware environment, VX Series can integrate into it easily.



VX Series solutions continue to innovate to help you modernize your business. For example, now you can benefit from vSAN features for your mission-critical SAP HANA workloads in a space-efficient 4U 4-socket platform using the new VX7820 Certified Node. VX Series simplifies and automates management tasks to provide both high performance and high reliability for your most mission-critical applications.

Enhancements to the VX Series portfolio include:

- Up to 5x faster data load times than previously, using direct-connect NVMe drives
- 4-socket configurations are SAP HANA HCI-certified for up to 6TB of memory; these configurations support twice as many VMs as a 2-socket 3TB SAP HANA-certified configuration, with up to 4 SAP HANA VMs concurrently

A successful hyperconverged/cloud solution requires not only speed and reliability, but also systems that are easy to manage. Using a combination of Lenovo XClarity elements and VMware vSphere Lifecycle Manager (vLCM), VX Series solutions make systems management extremely easy and quick. This combination provides advanced service-processor control, monitoring, and alerting for VMware vSphere, plus simplified updates.



With compute, storage, and virtualization resources integrated into a single node, VX Series enables you to dramatically simplify your infrastructure by pooling multiple sets of node resources into a single virtual structure for more efficient utilization and management. Plus, the infrastructure scales rapidly to meet the growing needs of your business.

[More information about Lenovo ThinkAgile VX Series](#)

## ThinkAgile HX Appliances and Certified Nodes

The ThinkAgile HX solution addresses software-defined infrastructure (SDI) challenges with an ideal balance of compute, memory, I/O resources, and continual feature enhancements across the entire product stack. HX Series is a best-in-class hyperconverged/cloud system, preloaded with industry-leading Nutanix software (including the Acropolis hypervisor and Prism). The solution dramatically simplifies data center management, frees up your IT staff, and accelerates workload deployment, ultimately reducing your total ownership cost.

With the addition of the HX3375 Appliance and HX3376 Certified Node, HX Series now offers you the choice of solutions based on AMD EPYC processors (in addition to the previous Intel Xeon-processor models) to support a wide range of VDI-dense workloads. Both the appliance and the certified node deliver greater virtualized workload consolidation with a higher core count than previous models, multiple GPU support, and an easy-to-use lifecycle management console.

Features of the new HX3375 and HX3376 models include:

- **Extreme computing scalability** — Scale from as many as 64 cores per socket down to only 8 to save money, up to 16 DIMMs / 1TB *per socket* to support more richly configured virtual machines (VMs) for an enhanced user experience, up to 128 lanes of PCIe Gen 4 bandwidth for ultimate performance when accessing high-speed I/O, and up to 12 storage devices, including up to 4x NVMe drives (30.72 TB max NVMe capacity), all in a slender 1U box.
- **GPU optimization** — Lenovo offers NVIDIA GPU software<sup>3</sup> to improve user performance in Citrix Virtual Apps and Desktops, VMware Horizon, and Red Hat Virtualization client environments.

Incorporating Nutanix InstantON for Citrix Cloud, HX Series is a tightly integrated hybrid cloud solution that simplifies and accelerates virtual desktops and application deployments for companies of any size.

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<sup>3</sup> For models with GPU support.



In addition, Lenovo engineers have enabled Life Cycle Manager (LCM), through Prism, to provide one-click planning, provisioning, insights, and firmware updates to achieve faster and simpler IT operations.

ThinkAgile HX appliance and Certified Nodes make it simple to expand and evolve your infrastructure and manage your data and applications, whether on-premises, in a multi-cloud, or in a hybrid cloud model. Increased processor-core density, increased memory bandwidth, and new security capabilities deliver an agile and resilient HCI solution optimized for workloads such as general virtual workload consolidation, and achieve greater VDI density not yet available in the HX offerings.

[More information about Lenovo ThinkAgile HX Series](#)

## ThinkAgile MX Series Appliances and Certified Nodes

ThinkAgile MX Certified Nodes and the new MX1020 and MX3320 appliances<sup>4</sup>, are built on the foundation of ThinkAgile certified hardware components and best recipe firmware, combined with the Microsoft **Azure Stack HCI** hyperconverged/cloud software stack. These appliances allow customers to deploy applications seamlessly from edge to cloud via subscription and consumption models, and to leverage Azure backup and recovery services through Lenovo, as a Microsoft CSP partner.

Azure Stack HCI software components are preloaded on MX Series appliances and transacted as a subscription SKU. Azure Stack customers will be able to reduce their startup costs, as well as scale dynamically more economically with a flexible, scalable, consumption-based pricing model. New features in Azure Stack HCI include stretch clustering, fleet management of multiple sites, managing virtual machines on-premises and in Azure, through Windows Admin Center. Azure hybrid services such as Backup, Disaster Recovery, Monitor, etc., all help customers further extend their applications across the edge to the cloud. Tight integration with Lenovo's XClarity elements ensures that customers can make use of these Azure hybrid services and HCI features, as well as manage their hardware easily.

Customers benefit from the simplified, quicker deployment features and ease of lifecycle management with XClarity. ThinkAgile MX appliances are delivered as turn-key integrated systems, including hardware, software, services, and ThinkAgile Advantage single point of support, eliminating the headaches caused by managing their infrastructure.

Lenovo is one of only three OEMs that have integrated systems with hardware, software, support, and services all bundled together to make it extremely easy for customers to get started with planning, deployment, and throughout the life of the product. Customers who run Microsoft workloads such as SQL

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<sup>4</sup> The MX1020 and MX3320 appliances are not available in PRC at this time.

and O365; Windows Server customers looking to refresh their OS; and Azure customers looking for alternatives to on-premises infrastructure, will find Azure Stack HCI and ThinkAgile MX appliances attractive.

[More information about Lenovo ThinkAgile MX Series](#)

## Diamanti SR630 Enterprise Kubernetes Appliance

Containers are the latest evolution of application technology, allowing you to reduce your data center footprint requirements, complexity, and overall TCO. Containers encapsulate application code and its dependencies while sharing the kernel of the host operating system (OS). This keeps the size of the containers small, and they can spin up in seconds. Numerous containers can run on a single server and the migration of containers across hardware is virtually instant.



But containers must be managed and deployed or migrated to where it is most convenient and in accordance with regulatory compliance, whether that may be on-premises, or in public, private, or hybrid clouds. Kubernetes is a popular system to perform these deployment and management functions.

Diamanti SR630<sup>5</sup> is a fully certified enterprise-class turn-key Kubernetes appliance integrating high-performance compute, plug-and-play networking, and persistent storage. No virtualization licenses are required. Hardware accelerator cards offload networking and storage I/O so that 95% of the computing power is dedicated to running your applications. In addition, the ability to deploy, migrate, and manage modern applications across data center, edge, and geographically distributed hybrid cloud infrastructures, offers unequalled resiliency against catastrophic failure.

Diamanti SR630 is a complete, factory-ready, full stack hardware/acceleration/software Kubernetes appliance and it is available today. If you need to accelerate your container initiatives and application performance with an out-of-the-box scalable solution that includes Kubernetes, container runtime, operating system, enterprise class DP/DR features, access controls, and management UI, the Diamanti SR630 is the right solution for you.

[More information about the Diamanti SR630 solution](#)

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<sup>5</sup> The Diamanti SR630 is not available in PRC at this time.



## ThinkSystem DE Series and DM Series Storage

In hyperconverged infrastructure (HCI)/cloud solutions, compute and storage scale together. This is attractive for many workloads, but it can be expensive. On the other hand, for workloads where you want to scale compute and storage *independently* of one another, traditional 3-tier storage solutions, such as Lenovo DM and DE Series arrays, are more cost-effective. For example, transactional databases with significant workload change rates are typically much better implemented on a 3-tier architecture.

ThinkSystem DM and DE Series arrays provide dedicated storage performance, availability, and low latency with high storage capacity. This enables your servers to specialize in computing and your storage to specialize in data management—as they were designed to do.

DM Series, in particular, is notable for its data efficiency (via deduplication, compression, and other features), which enables customers to store more data in less space. Equally notable is its WORM capability (write-once, read many) for creating immutable snapshots to meet compliance requirements and provide malware protection. DM Series is advantageous if you implement multiple types of storage, such as block, file, and object. It's designed with native cloud data management capabilities, such as mirroring to another site or to the cloud, for high availability and disaster recovery.

DE Series is particularly effective for long-term archives or large dataset storage (such as video ingestion or long-term records archival), due to its data efficiency and total usable storage capacity.

Because each type of storage architecture has its benefits, many customers implement a combination of HCI and traditional storage: HCI for certain workloads and traditional storage for other workloads whose data and compute requirements scale independently, or which have more demanding data management requirements.

[More information about Lenovo ThinkSystem DE Series and DM Series storage](#)



## Lenovo Cloud Lifecycle Services

The only guarantee in today's market is that tomorrow will bring a new challenge.

The smarter first step in the real-world of data center modernization is knowing where you are and charting the best path to reaching your unique definition of success. Lenovo's Principal Consultant-led workshops, free to qualified customers, help navigate the many options across multiple cloud platforms, so you choose the right path that leads directly to achieving your business goals.

Whichever cloud option you choose will come with a data center solution designed from the ground up to face the market challenges you have now, and handle those you might face down the road. That's because Lenovo knows that the right-sized, future-ready IT environment is not just a smart strategy, it's a must to maintain business continuity.

This proactive approach is your key to making agile decisions that help ensure you survive and thrive against evolving market and customer expectations. Lenovo Professional Services offers flexible and customizable hybrid cloud automation, optimization, and service management solutions across Lenovo HX, VX, and public cloud workloads and platforms, helping you stay ahead of potential business-limiting technology challenges

In addition, Lenovo TruScale's pay-for-what-you-use data center solution can encompass all of this and more, to offer you ultimate personalization, flexibility, and power that grows when and how you want it to, with no upfront capital costs and a unique billing structure truly tailored to your needs and unlike anything else in the industry.

More information about [Lenovo Cloud Lifecycle Services](#)

## Summary

The IT world, like the world around it, has been evolving at an ever-accelerating pace. More types of data, in exponentially larger quantities than ever before, flow into the datacenter every day. Your overworked IT staff can't do everything. There are bound to be skills required for tuning certain workloads, or specialized knowledge needed to design your ideal infrastructure, that your people simply don't have. Or they may be highly knowledgeable about your datacenter design and operations, but vastly overworked.

Just as one-size-fits-all clothing rarely does, neither does one-size-fits-all HCI/cloud solutions. What you need is a solution designed for the specialized needs of specific workloads, combined with all the



expertise required to make the solution mesh perfectly with your current operations solutions, combined with the industry's fastest and most reliable family of servers.

Think about it, if you have a heart condition that requires life-saving surgery, who would you rather perform the surgery, a general-practitioner (AKA jack-of-all-trades, master of none), or a cardiothoracic surgeon with 30 years of experience? Any sane person given the option would choose the latter.

When comparing our targeted, workload-optimized solution offerings to the scattershot generic solutions offered by competitors, it's clear that the others can't match up with our offerings.

We'll give you as much or as little services handholding as you need, we have the expertise and experience to provide the most optimized solutions for your specific workloads, we partner with the software industry leaders, to bring you solutions tailored to the specific workloads you're running, and we have the hardware to keep your datacenter up and running longer and running faster than other server platforms.

Lenovo has a solution for you that will simplify and speed deployment, maintenance, and daily operations. Add in ThinkSystem DM or DE storage solutions and Lenovo Professional Services to smooth out any bumps in the road, and you have the recipe for a highly successful installation and an efficiently operating datacenter.



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