



Lenovo ThinkAgile VX850 V3 Certified Node Product Guide

The Lenovo ThinkAgile VX850 V3 is a 2U 4-socket system that features the 4th Generation Intel Xeon Scalable processors. This system is based on the ThinkSystem SR850 V3 with up to 60 cores per processor, up to 16 TB of TruDDR5 memory with up to 4800 MHz memory speeds, and an extensive selection of internal storage and networking options. VMware offers a unique, software-defined approach to hyperconvergence, leveraging the hypervisor to deliver compute, storage and management in a tightly integrated software stack.

The 2U system is available as a certified node:

- VX850 V3 Certified Node, supporting up to 4 processors
- VX 850 V3 SAP HANA Certified Node, supporting up to 4 processors * (Pending final SAP certification on the SAP HANA hardware directory.)

Common uses for this system are high-performance workloads such as databases, SAP HANA, e-mail and collaboration, and workload-balancing clusters.



Figure 1. Lenovo ThinkAgile VX850 V3

Did you know?

The ThinkAgile VX850 V3 are built on the Lenovo ThinkSystem SR850 V3 server that features the ultimate in enterprise-class scalability, performance, reliability, management, and security.

All VX850 V3 certified nodes offer ThinkAgile Premier Support Options for quick 24/7 problem reporting and resolution.

Key features

ThinkAgile features

The ThinkAgile VX850 V3 offers the following key features:

- Factory-integrated, pre-configured ready-to-go system built on proven and reliable Lenovo ThinkSystem servers that provide compute power for a variety of workloads and applications and powered by industry-leading hyperconverged infrastructure software from VMware.
- Provide quick and convenient path to implement a hyperconverged solution powered by VMware vSAN with "one stop shop" and a single point of contact provided by Lenovo for purchasing, deploying, and supporting the solution.
- Meet various workload demands with cost-efficient hybrid or performance-optimized all-flash storage configurations.
- Deliver fully validated hardware and firmware that is certified with VMware software.
- Lenovo ThinkAgile Premier Support for quick 24/7 problem reporting and resolution.
- The VX850 V3 Certified Nodes for SAP HANA are certified by SAP to run SAP HANA in production on hyperconverged infrastructure.* (Pending final SAP certification on the SAP HANA hardware directory.)
- Offer Lenovo deployment services to get customers up and running quickly.

The VMware software running on ThinkAgile VX850 V3 delivers the following key features:

- Distributed architecture that allows "pay-as-you-grow", non-disruptive scaling by adding new nodes to the cluster (scale-out) to increase capacity and performance.
- Advanced capacity management, including deduplication, compression, and erasure coding (RAID 5/6), which helps deliver greater storage utilization with dramatically lower storage capacity and costs.
- Automation of VM storage provisioning and control of storage service levels (capacity, performance, availability) with VM-centric policies to load balance storage resources.
- Native HCI security solution with two-factor authentication (SecurID and CAC) and data-at-rest encryption that does not require self-encrypting drives (SEDs).
- Stretched cluster with local and site failure protection between two geographically dispersed sites for higher level of availability with near zero downtime.
- Centralized management with provisioning, administering, and monitoring virtual resources across multiple hosts and clusters from a centralized interface.
- Rapid workload provisioning, simplified data center operations, increased business efficiency, and decreased CAPEX and OPEX costs.
- VM and data protection with agent-less, image-level virtual machine backups and application-aware protection for business-critical Microsoft applications (Exchange, SQL Server, SharePoint) along with WAN-efficient, encrypted backup data replication.
- Reduced unplanned downtime and virtually eliminated planned downtime for server and storage maintenance with live workload migration, high availability, and fault tolerance.
- Enhanced application performance and availability with resource management, load balancing, and access prioritization.
- Intelligent operations management and automation to proactively monitor and manage compute, storage, and networking resources, identify performance bottlenecks, and re-balance workloads by leveraging predictive analytics.
- Capacity planning and optimization guidance to address future needs with performance trends, projections and extended forecasts.

- Managing remote offices and branch offices with rapid provisioning of servers through virtualization, minimization of host configuration drift, and enhanced visibility into regulatory compliance, across multiple sites.

Hardware features

The VX system is based on the SR850 V3 and have the following hardware features:

Scalability and performance

The VX system offers numerous features to boost performance, improve scalability, and reduce costs:

- Supports fourth-generation Intel Xeon Processor Scalable processors
- High-performance scale-out offering where up to 4 processors and 64 DIMMs are housed in 2U of rack space.
- Supports Gold and Platinum processors in the Intel Xeon Processor Scalable Family. Processors supported:
 - Up to 60 cores
 - Core speeds of up to 3.7 GHz
 - TDP ratings of up to 350W
- Up to four processors, 240 cores, and 480 threads maximize the concurrent execution of multithreaded applications.
- Support for up to 64 TruDDR5 memory DIMMs operating at up to 4800 MHz means you have the fastest available memory subsystem and memory capacity of up to 16 TB with 64x 256 GB 3DS RDIMMs.
- Supports configurations of 2 DIMMs per channel to operate at the 4400 MHz rated speed of the memory DIMMs.
- Up to 24x 2.5-inch SSDs provide a flexible and scalable all-in-one platform to meet your increasing demands.
- Up to 24x 2.5-inch drive bays -- supporting combinations of SAS or SATA HDDs, SAS or SATA SSDs, and NVMe PCIe SSDs -- provide a flexible and scalable all-in-one platform to meet your increasing demands. Up to 24x NVMe drives are supported, maximizing drive I/O performance in terms of throughput, bandwidth, and latency
- The use of solid-state drives (SSDs) instead of traditional spinning drives (HDDs) improves I/O performance. An SSD can support up to 100 times more I/O operations per second (IOPS) than a typical HDD.
- Supports up to two externally accessible 7mm hot-swap drives with hardware RAID functionality, in addition to the 24 front drive bays. These 7mm drives are ideal for operating system boot functions.
- As an alternative to the 7mm drives, the server supports an M.2 adapter for convenient operating system boot functions. Available M.2 adapters support hardware RAID for boot drive performance and reliability.
- The server is Compute Express Link (CXL) v1.1 Ready. With CXL 1.1 for next-generation workloads, you can reduce compute latency in the data center and lower TCO. CXL is a protocol that runs across the standard PCIe physical layer and can support both standard PCIe devices as well as CXL devices on the same link.
- High-speed HBA's from Lenovo and Broadcom provide 12 Gb SAS connectivity to the drive backplanes. A variety of adapters are available, with support for all 24 drives in the server with multiple controllers.
- The server has two dedicated industry-standard OCP 3.0 small form factor (SFF) slots, with a PCIe 5.0 x16 interface, supporting a variety of Ethernet network adapters up to 100GbE. Simple-swap mechanism with thumbscrews and pull-tab enables tool-less installation and removal of the adapter. Supports shared BMC network sideband connectivity to enable out-of-band systems management.

Availability and serviceability

The VX850 V3 system is based on a modular service model where all components and options can be removed from the front or rear of the system, even parts that are located in the center of the machine such as fans, memory DIMMs, and processors. The VX850 V3 is designed for 99.99% availability.

The VX system provides many features to simplify serviceability and increase system uptime:

- The server offers Single Device Data Correction (SDDC, also known as Chipkill), Adaptive Double-Device Data Correction (ADDDC, also known as Redundant Bit Steering or RBS), and memory mirroring for redundancy in the event of a non-correctable memory failure.
- The server has two hot-swap drives, supporting RAID redundancy for data protection and greater system uptime.
- Support for hardware RAID to enable RAID-1 support on M.2 or 7mm drives for enhanced data protection of boot drives
- The server two hot-swap redundant power supplies and six N+1 redundant fans to provide availability for business-critical applications.
- The power-source-independent light path diagnostics uses LEDs to lead the technician to failed (or failing) components, which simplifies servicing, speeds up problem resolution, and helps improve system availability.
- The included LCD system information display panel provides greater diagnostic function by listing all error messages and VPD data needed for a service call, thereby speeding problem resolution and increasing system uptime.
- Proactive Platform Alerts (including PFA and SMART alerts): Processors, voltage regulators, memory, internal storage (SAS/SATA HDDs and SSDs, NVMe SSDs, flash storage adapters), fans, power supplies, RAID controllers, server ambient and subcomponent temperatures. Alerts can be surfaced through the XClarity Controller to managers such as Lenovo XClarity Administrator and VMware vCenter. These proactive alerts let you take appropriate actions in advance of possible failure, thereby increasing server uptime and application availability.
- Solid-state drives (SSDs) offer more reliability than mechanical HDDs for greater uptime.
- The built-in Lenovo XClarity Controller 2 (XCC2) continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failures to minimize downtime.
- Built-in diagnostics in UEFI, using Lenovo XClarity Provisioning Manager, speed up troubleshooting tasks to reduce service time.
- Lenovo XClarity Provisioning Manager supports diagnostic functions and collects service data to USB key drive or remote CIFS share folder for troubleshooting, to reduce servicing time.
- Auto-restart in the event of a momentary loss of AC power (based on power policy setting in the XClarity Controller service processor).
- Support for the XClarity Administrator Mobile app running on a supported smartphone and connected to the server through the service-enabled USB port, enables additional local systems management functions.
- Three-year or one-year customer-replaceable unit and onsite limited warranty, 9 x 5 next business day. Optional service upgrades are available.

Manageability and security

Powerful systems management features simplify local and remote management of the VX systems:

- Lenovo XClarity Controller 2 (XCC2) monitors server availability and performs remote management. XCC Platinum is standard, which enables remote KVM, the mounting of remote media files (ISO and IMG image files), boot capture, and power capping.
- Lenovo XClarity Administrator offers comprehensive hardware management tools that help to increase uptime, reduce costs, and improve productivity through advanced server management capabilities.
- UEFI-based Lenovo XClarity Provisioning Manager, accessible from F1 during boot, provides system inventory information, graphical UEFI Setup, platform update function, RAID Setup wizard, operating system installation function, and diagnostic functions.
- Support for Lenovo XClarity Energy Manager, which captures real-time power and temperature data from the server and provides automated controls to lower energy costs
- Root of Trust (RoT) module includes Platform Firmware Resiliency (PFR) and Trusted Platform Module (TPM) 2.0, which further enhances key platform subsystem protections by detecting unauthorized firmware updates, recovering corrupted images to a known-safe image, and monitoring firmware to ensure it has not been compromised. It secures and authenticates the system to prevent unauthorized access.
- Integrated Trusted Platform Module (TPM) 2.0 support enables advanced cryptographic methods, such as digital signatures and remote attestation.
- Supports Secure Boot to ensure only a digitally signed operating system can be used. Supported with HDDs and SSDs, as well as 7mm or M.2 drives.
- Industry-standard Advanced Encryption Standard (AES) NI support for faster, stronger encryption.
- Intel Execute Disable Bit functionality can prevent certain classes of malicious buffer overflow attacks when combined with a supported operating system.
- Intel Trusted Execution Technology provides enhanced security through hardware-based resistance to malicious software attacks, allowing an application to run in its own isolated space, protected from all other software running on a system.

Energy efficiency

The VX systems offers the following energy-efficiency features to save energy, reduce operational costs, and increase energy availability:

- The server can be used in environments up to ASHRAE A4 with ambient temperatures up to 45 °C.
- High-efficiency power supplies with 80 PLUS Platinum and Titanium certifications
- Energy-efficient planar components help lower operational costs.
- High-efficiency power supplies with 80 PLUS Platinum certifications
- Intel Intelligent Power Capability powers individual processor elements on and off as needed, to reduce energy draw.
- Low-voltage 1.1 V DDR5 memory offers energy savings compared to 1.2 V DDR4 DIMMs.
- Solid-state drives (SSDs) consume as much as 80% less power than mechanical 2.5-inch HDDs.
- Optional Lenovo XClarity Energy Manager provides advanced data center power notification, analysis, and policy-based management to help achieve lower heat output and reduced cooling needs.

Components and connectors

The ThinkAgile VX850 V3 are based on the ThinkSystem SR850 V3server.

The following figure shows the front view of the VX850 V3 systems.

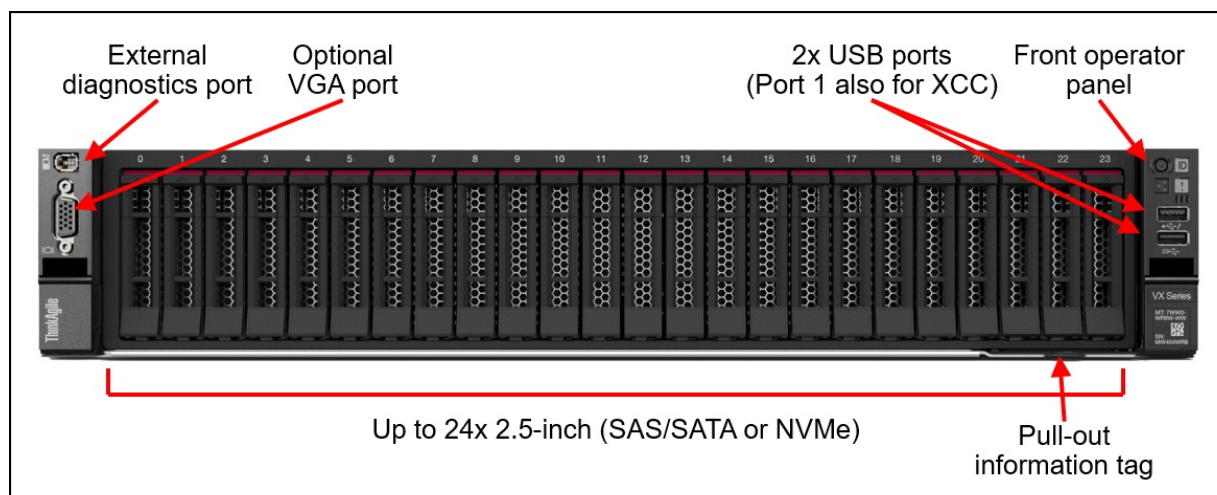


Figure 2. VX850 V3 front view

The front of the ThinkAgile VX850 V3 includes the following components:

- Up to 24x SFF hot-swap drive bays
- One VGA port
- One USB 2.0 port with XClarity Controller access
- One USB 2.0 port
- A Power button
- Status LEDs
- A Pull-out LCD panel

The following figure shows the rear view of the VX systems.

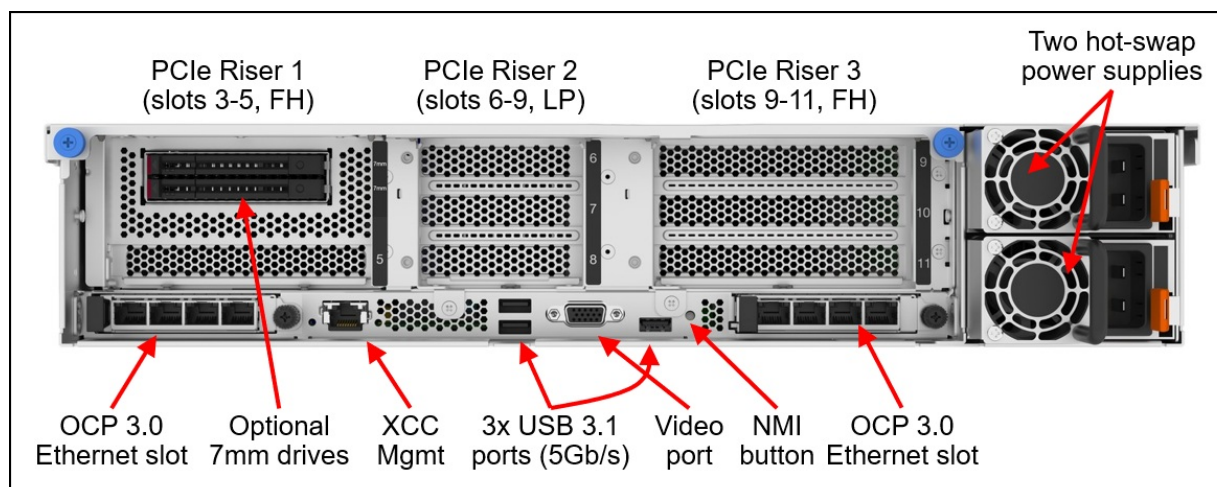


Figure 3. VX850 V3 rear view

The rear of the ThinkAgile VX850 V3 includes the following components:

- PCIe Riser Card 1 (optional): Up to four PCIe slots
- I/O Tray:
 - Three PCIe slots
 - One ML2 slot
 - Two OCP card slots

- PCIe Riser Card 2 (optional): Up to four PCIe slots
- One 1 GbE port for XClarity Controller
- Three USB 3.0 ports
- One VGA port
- Two hot-swap power supplies (four power supplies shown)

The following figure shows the locations of key components inside the system.

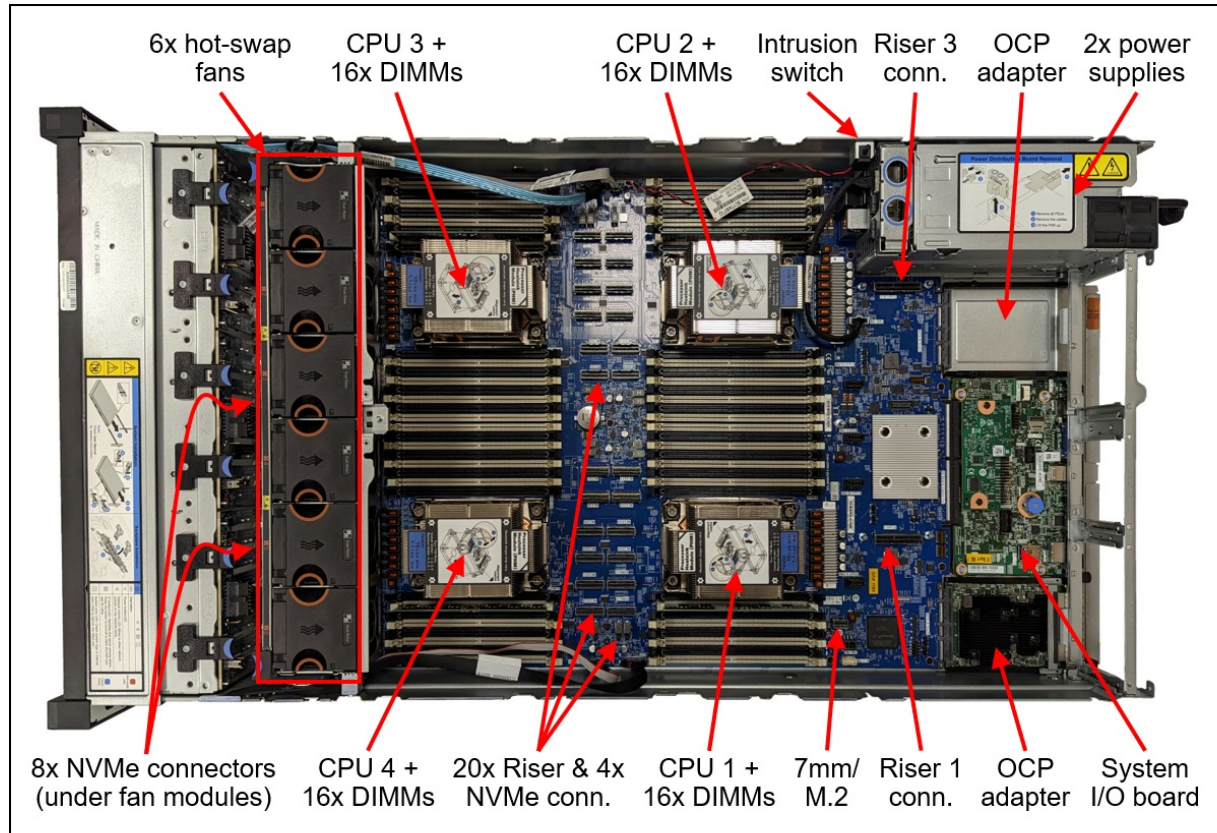


Figure 4. Internal view of the VX850 V3 system

Standard specifications

The ThinkAgile VX850 V3 are based on the ThinkSystem SR850 V3 server.

The following table provides an overview of the VX systems.

Table 1. Overview of VX850 V3 features

	VX850 CN	VX850 SAP HANA CN
VX offering type	Certified Node	Certified Node
Target workloads	High Performance	SAP HANA
Base MTM	7DDKCTO2WW	7DDKCTO3WW
Form Factor	2U	2U
Base platform	SR850 V3	SR850 V3
CPU	2x or 4x Intel Xeon SP Gen 4	2x or 4x Intel Xeon SP Gen 4
Memory	64x DDR5 4800 MHz (16 GB - 16 TB)	64x DDR5 4800 MHz (16 GB - 16 TB)
Hot-swap drive bays	Up to 24x 2.5"	Up to 24x 2.5"
Drive Configuration	All Flash	All Flash
Disk Groups	1-5	2-4
HBA	<ul style="list-style-type: none"> • 440-8i • 440-16i • 4350-8i • 4350-16i 	<ul style="list-style-type: none"> • 440-8i • 440-16i • 4350-8i • 4350-16i
Boot drives	2x M.2 NVME	2x M.2 NVME
OCF networking	2x OCP adapters, 1Gb, 10Gb, 25Gb, 100Gb	2x OCP adapters, 1Gb, 10Gb, 25Gb, 100Gb
PCIe networking	Up to 12x adapters 10Gb, 25Gb, 40Gb, 100Gb, 200Gb, 400Gb	Up to 12x adapters 10Gb, 25Gb, 40Gb, 100Gb, 200Gb, 400Gb
GPUs	4x SW GPU 2x DW GPU	None
Hypervisor	ESXi 8.0u1 (Factory Installed)	ESXi 8.0u1 (Factory Installed)

The following table lists the system specifications of the ThinkAgile VX850 V3.

Table 2. System specifications

Attribute	Specification
Machine types	7DDK - VX850 V3
Form factor	2U Rack-mount
Processors	2x or 4x 4th Gen Intel Xeon Scalable processors
Chipset	Intel C741 "Emmitsburg" chipset, part of the platform codenamed "Eagle Stream" (EGS)
Memory	Up to 64 DIMM slots (16 DIMMs per processor). Each processor has 8 memory channels, with 2 DIMMs per channel. Lenovo TruDDR5 RDIMMs and 3DS RDIMMs are supported. DIMMs operate at up to 4800 MHz at 1 DPC and 4400 MHz at 2 DPC.
Persistent Memory	No support
Memory protection	Error correction code (ECC), Single Device Data Correction (SDDC; for x4-based memory DIMMs), Adaptive Double Device Data Correction (ADDDC; for x4-based memory DIMMs and Intel Xeon Gold or Platinum processors), patrol scrubbing, and demand scrubbing.
Memory capacity	Up to 16TB with 64x 256GB 3DS RDIMMs and four processors (4.0TB per processor)

Attribute	Specification
Drive bays	<p>Up to 24x 2.5-inch hot-swap drive bays:</p> <ul style="list-style-type: none"> Up to 24x SAS/SATA drive bays Up to 24x AnyBay drive bays (support SAS, SATA, Gen4 NVMe, or Gen5 NVMe drives) <p>Optional two 7mm hot-swap SSD drive bays at the rear of the server with NVMe for OS boot or storage</p>
Disk groups	<ul style="list-style-type: none"> 1-5 disk groups
Storage controller	<ul style="list-style-type: none"> 12 Gb SAS/SATA non-RAID, planned for 1Q/2024 <ul style="list-style-type: none"> 440-8i 440-16i 4350-8i 4350-16i
Network interfaces	Two dedicated OCP 3.0 SFF slots with PCIe 5.0 x16 host interface. Supports a variety of 2-port and 4-port adapters with network connectivity up to 100 GbE. One port can optionally be shared with the XClarity Controller (XCC2) management processor for Wake-on-LAN and NC-SI support.
Boot volume	<p>2x M.2 hot-swap NVME SSDs (RAID-1).</p> <p>2x 7mm hot-swap NVME SSDs(RAID-1).</p>
I/O expansion slots	<p>Up to 12 PCIe slots, depending on the configuration, plus two Gen5 OCP 3.0 slots. Slot combinations are based on the risers selected:</p> <ul style="list-style-type: none"> With Full height & Low Profile slots: <ul style="list-style-type: none"> Gen 4 only: 9x Gen4 Gen 5/Gen 4 slots: 6x Gen5 + 1x Gen4 Low Profile only slots: <ul style="list-style-type: none"> Gen 4 only : 12x Gen4 slots Gen 5/Gen 4 slots: 8x Gen5 + 4x Gen4
Ports	<ul style="list-style-type: none"> Front: 1x USB 2.0 port with XClarity Controller access, 1x USB 3.0 port, 1x VGA port. Rear: 2x USB 3.0 ports, 1x VGA port, 1x DB-9 serial port, 1x RJ-45 10/100/1000 Mb Ethernet port for systems management.
Cooling	6x N+1 redundant hot-swap 60 mm fans (all 6 standard). One additional fan integrated in each of the two power supplies.
Power supply	Two hot-swap redundant AC power supplies (80 PLUS Platinum or Titanium certification): 1100W to 2600W options, supporting 220 V AC. 1100 W options also support 110V input supply. For China only, supports 1300 W and 2600 W 240V AC/DC Platinum CRPS, or 1600 W 336V DC or -48V DC CRPS. Power supplies can be configured as N+N redundant.
Video	Embedded video graphics with 16 MB memory with 2D hardware accelerator, integrated into the XClarity Controller. Maximum resolution is 1920x1200 32bpp at 60Hz
Hot-swap parts	SSDs, power supplies, and fans.
Systems management	Operator panel with status LEDs. Optional External Diagnostics Handset with LCD display. Models with 16x 2.5-inch front drive bays can optionally support an Integrated Diagnostics Panel. XClarity Controller 2 (XCC2) embedded management based on the ASPEED AST2600 baseboard management controller (BMC). Dedicated rear Ethernet port for XCC2 remote access for management. XClarity Administrator for centralized infrastructure management, XClarity Integrator plugins, and XClarity Energy Manager centralized server power management. XCC Platinum is included which enables remote control functions and other features.

Attribute	Specification
Security features	Chassis intrusion switch, Power-on password, administrator's password, Root of Trust module supporting TPM 2.0 and Platform Firmware Resiliency (PFR).
Software	Software licenses that can be purchased from Lenovo or provided by the customer: <ul style="list-style-type: none"> • VMware vSAN: Standard, Advanced, Enterprise, Enterprise Plus, ROBO or Desktop • VMware vSphere: Standard, Enterprise Plus or ROBO • HCI Kit: Essentials, Standard, Advanced, Enterprise or ROBO • VMware Horizon: Standard, Advanced or Enterprise • VMware Cloud Foundation (VCF): Basic, Standard, Advanced, Enterprise or for VDI • VMware vCenter Server: Foundation or Standard
Hypervisors	VMware ESXi See Operating system support section for details
Limited warranty	Three-year or one-year (model dependent) customer-replaceable unit and onsite limited warranty with 9x5 next business day (NBD).
Service and support	Optional service upgrades are available through Lenovo Services: 4-hour or 2-hour response time, 6-hour fix time, 1-year or 2-year warranty extension, software support for Lenovo hardware and some third-party applications.
Dimensions	Width: 447 mm (17.6 in.), height: 87 mm (3.4 in.), depth: 902 mm (35.5 in.).
Weight	Maximum: 36.7 kg (80.9 lb)

Models

Factory-integrated models of the integrated systems and certified nodes are configured by using the Lenovo Data Center Solution Configurator (DCSC), <http://dcsc.lenovo.com>

To ensure that the controlled GPUs and accelerators are only sold in the supported markets, the following configure-to-order base machine-type models (CTO MTMs) are selectable in DCSC:

- **Standard Open models** are available in all markets worldwide. Controlled GPUs cannot be configured using these models. These are CTO1WW models.
- **GPU Controlled models** are used to order any of the controlled GPUs and accelerators. Controlled models are not available in affected markets. If you start from a controlled model, your configuration must include a controlled GPUs.

Note:

- For all models listed in the GPU **Controlled models** column, one of the controlled GPUs *must* be selected in the DCSC configurator. DCSC will display an error if your configuration does not include one of the controlled GPUs.
- It is highly recommended to engage a Lenovo representative early in a project that includes the ThinkAgile VX Series Integrated Systems and Certified Nodes

The following table lists the base CTO models.

Table 3. CTO base models

Server model	Standard Open models	GPU Controlled models
	These CTO models are available in all markets. Configurations based on these MTMs cannot include controlled GPUs.	These CTO models are not available in affected markets. Configurations based on these MTMs must include controlled GPUs.
ThinkAgile VX850 V3 Certified Node	7DDKCTO2WW	7DDKCTOBWW
ThinkAgile VX850 V3 SAP HANA Certified Node	7DDKCTO3WW	None

Comparison with the ThinkSystem SR850 V3

The ThinkAgile VX850 V3 is based on the ThinkSystem SR850 V3 server, however there are key differences:

- No onboard SATA controller support
- Persistent Memory not supported
- RAID adapter supported for boot only
- No VROC Support
- No HDDs
- Encryption not supported on SED drives
- Fibre Channel support for data migration only
- No InfiniBand support
- Drives are categorized as Cache or Capacity drives and are formed as disk groups (up to 5 disk groups for OSA configurations. ESA configurations only consist of a storage tier, no cache drives or disk groups required

For details about the ThinkSystem SR850 V3, see the SR850 V3 product guide:

<https://lenovopress.lenovo.com/lp1605-thinksystem-sr850-v3-server>

To verify what specific hardware components are supported with the VX850 V3, see the DCSC configurator:

<https://dcsc.lenovo.com>

Processors

The VX850 V3 systems support two or four processors.

The following table lists the supported processors.

For details about these processors, including configuration rules, see the SR850 V3 product guide:

<https://lenovopress.lenovo.com/lp1605-thinksystem-sr850-v3-server#processors>

Table 4. Processor choices

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
None	BQ6C	Intel Xeon Gold 6416H 18C 165W 2.2GHz Processor	4	4
None	BQ6B	Intel Xeon Gold 6418H 24C 185W 2.1GHz Processor	4	4
None	BQ6E	Intel Xeon Gold 6434H 8C 195W 3.7GHz Processor	4	4
None	BQ6A	Intel Xeon Gold 6448H 32C 250W 2.4GHz Processor	4	4
None	BPPH	Intel Xeon Platinum 8444H 16C 270W 2.9GHz Processor	4	4
None	BPPG	Intel Xeon Platinum 8450H 28C 250W 2.0GHz Processor	4	4
None	BPPF	Intel Xeon Platinum 8454H 32C 270W 2.1GHz Processor	4	4
None	BPPN	Intel Xeon Platinum 8460H 40C 330W 2.2GHz Processor	4	4

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
None	BPPE	Intel Xeon Platinum 8468H 48C 330W 2.1GHz Processor	4	4
None	BPPS	Intel Xeon Platinum 8490H 60C 350W 1.9GHz Processor	4	4

Memory

The VX850 V3 systems support the following memory options. The systems support 64 DIMMs with four processors.

For details about these options, including configuration rules, see the SR850 V3 product guide:
<https://lenovopress.lenovo.com/lp1605-thinksystem-sr850-v3-server#memory-options>

Table 5. Memory options

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
RDIMMs				
4X77A77029	BKTL	ThinkSystem 16GB TruDDR5 4800MHz (1Rx8) RDIMM	64	64
4X77A77031	BKTM	ThinkSystem 32GB TruDDR5 4800MHz (2Rx8) RDIMM	64	64
4X77A77030	BNF6	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 10x4 RDIMM	64	64
4X77A77032	BNF9	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 10x4 RDIMM	64	64
4X77A87034	BZC2	ThinkSystem 96GB TruDDR5 4800MHz (2Rx4) RDIMM	64	64
3DS RDIMMs				
4X77A77034	BNFC	ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM v2	64	64
4X77A77035	BNF8	ThinkSystem 256GB TruDDR5 4800MHz (8Rx4) 3DS RDIMM v2	64	64
Optimized RDIMMs (9x4 RDIMMs)				
4X77A77483	BNW5	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 9x4 RDIMM	64	64
4X77A77033	BKTN	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 9x4 RDIMM	64	64

Internal storage

The VX850 V3 supports up to 24x 2.5-inch hot-swap drive bays, accessible from the front of the system.

The front drive bay are configured using 8-bay backplanes. The two available backplanes are:

- 8-bay 2.5-inch SAS/SATA backplane
- 8-bay 2.5-inch AnyBay backplane

Table 6. Drive backplanes

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
4XB7A86630	BT3B	ThinkSystem SR850 V3/SR860 V3 8x 2.5" AnyBay Backplane	3	3
4XB7A86629	BT3A	ThinkSystem SR850 V3/SR860 V3 8x 2.5" SAS/SATA Backplane	3	3

For details about these components, including configuration rules, see the SR850 V3 product guide:

<https://lenovopress.lenovo.com/lp1605-thinksystem-sr850-v3-server#internal-storage>

For OS boot functions, the systems also supports one 7mm hot-swap drives at the rear of the server, or one M.2 drives installed on an adapter internal to the server. The following table lists the supported controllers/enablement kits for M.2 and 7mm boot drives.

For details about these options, including configuration rules, see the SR850 V3 product guide:

<https://lenovopress.com/lp1605-thinksystem-sr850-v3-server#internal-storage>

Table 7. Boot Drive Enablement

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
M.2 enablement kits				
4Y37A09750	B8P9	ThinkSystem M.2 NVMe 2-Bay RAID Enablement Kit	1	1
7mm enablement kits				
None	B8P3	ThinkSystem 2U 7mm Drive Kit w/ NVMe RAID	1	1

Disk Groups

The following table lists the supported Disk Groups for the ThinkAgile VX850 Certified Node.

Table 8. Disk Groups

Drive Selection Rules	VX850 Certified Node	VX850 SAP Hana Certified Node
Model Type	All Flash (AF)	All Flash (AF)
Maximum number of drives	24	24
Number of Disk Groups	1 - 5	2-4
Number of Cache drives per Disk Group	1	1
Number of Capacity drives per Disk Group	2 - 7	2 - 7
Allowed Capacity Drive quantities:		
1 Disk Group (1 Cache drive)	2, 3, 4, 5, 6, 7	Not Supported
2 Disk Groups (2 Cache drives)	4, 6, 8, 10, 12, 14	4, 6, 8, 10, 12, 14
3 Disk Groups (3 Cache drives)	6, 9, 12, 15, 18, 21	6, 9, 12, 15, 18, 21
4 Disk Groups (4 Cache drives)	8, 12, 16, 20	8, 12, 16, 20
5 Disk Groups (5 Cache drives)	10, 15	Not Supported

Controllers for internal storage

The VX850 V3 systems support the following storage controller options. Support is planned for 1Q/2024.

Table 9. Controllers for internal storage

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
4Y37A72480	BJHH	ThinkSystem 4350-8i SAS/SATA 12Gb HBA	1	1
4Y37A72481	BJHJ	ThinkSystem 4350-16i SAS/SATA 12Gb HBA	1	1
4Y37A78601	BM51	ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA	1	1
4Y37A78602	BM50	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA	1	1

Internal drive options

There are two storage architectures to consider when implementing vSAN 8. The traditional architecture in vSAN 8, now called Original Storage Architecture (OSA) that is divided into 2 Tiers, cache and capacity and Express Storage Architecture (ESA) which is a single tier.

For more information on vSAN 8 ESA:

<https://lenovopress.lenovo.com/lp1670-improve-storage-performance-with-thinkagile-vx-vmware-vsan-esa-micron-nvme#introduction>

This section lists the supported drives:

- [Boot drives](#)
- [Internal drives for VX850 V3 CN](#)
- [Internal drives for VX850 CN for SAP HANA](#)

Configuration Note:

- Express Storage Architecture (ESA) is the only supported architecture. Original Storage Architecture will be supported in the future.
- VMware will no longer support higher capacity drives hard drives greater than 8TB
- Express Storage Architecture (ESA) supports a minimum of 2 drives and a maximum of 24 drives. Please reference the [vSAN ESA ReadyNode Hardware Guidance](#) for additional requirements.
- VMware vSAN certification for Generic NVMe drives: The drives are listed in the [VMware Compatibility Guide](#) (VCG) under the drive vendor company name instead of Lenovo. To check a drive for vSAN certification, search the VCG using the Supplier part number. Part numbers can be found using the Product Guide for the corresponding Drive Family on Lenovo Press https://lenovopress.lenovo.com/servers/options/drives#sort=last_update.

Boot drives

The VX850 V3 systems support the following drive for boot functions.

Table 10. Boot drives

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
7mm PCIe 4.0 NVMe Drives				
4XB7A82853	BPZ4	ThinkSystem 7mm U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	2	2
4XB7A82855	BPZ5	ThinkSystem 7mm U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	2	2
4XB7A82856	BPZ6	ThinkSystem 7mm U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	2	2
M.2 PCIe 4.0 NVMe Drives				
4XB7A82636	BS2P	ThinkSystem M.2 7450 PRO 480GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2	2
4XB7A13999	BKSR	ThinkSystem M.2 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2	2

Internal drives for VX850 V3 CN

The following table lists the drives supported in the VX850 V3 CN. Drives are classified as either Cache drives, Capacity drives, or both.

Table 11. Drives supported in the VX850 V3 CN

Part number	Feature	Description	All Flash	All Flash	
			ESA	Cache	Capacity
2.5-inch hot-swap 24 Gb SAS SSDs					
4XB7A80318	BNWC	ThinkSystem 2.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80319	BNWE	ThinkSystem 2.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80322	BP3J	ThinkSystem 2.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	No	24	24
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	No	24	24
4XB7A80342	BNW6	ThinkSystem 2.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD	No	24	24
4XB7A80343	BP3K	ThinkSystem 2.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD	No	24	24
2.5-inch hot-swap 6 Gb SAS SSDs					
4XB7A82289	BQ21	ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82290	BQ24	ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82291	BQ22	ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82292	BQ23	ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82259	BQ1P	ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A82260	BQ1R	ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A82261	BQ1X	ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	24

Part number	Feature	Description	All Flash	All Flash	
			ESA	Cache	Capacity
4XB7A82262	BQ1S	ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A82263	BQ1T	ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	24
2.5-inch hot-swap PCIe 4.0 NVMe SSDs					
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17136	BA4V	ThinkSystem 2.5" U.2 P5620 12.8TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17158	BKKY	ThinkSystem 2.5" U.2 P5800X 400GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A17159	BKKZ	ThinkSystem 2.5" U.2 P5800X 800GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A17160	BMM8	ThinkSystem 2.5" U.2 P5800X 1.6TB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A13970	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A79646	BNF3	ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	No	24

Part number	Feature	Description	All Flash	All Flash	
			ESA	Cache	Capacity
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	No	24
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
2.5-inch hot-swap PCIe 5.0 NVMe SSDs					
4XB7A82366	BTPZ	ThinkSystem 2.5" U.3 PM1743 1.92TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24
4XB7A82367	BTQ0	ThinkSystem 2.5" U.3 PM1743 3.84TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24
4XB7A82368	BTQ1	ThinkSystem 2.5" U.3 PM1743 7.68TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24
4XB7A82369	BTQ2	ThinkSystem 2.5" U.3 PM1743 15.36TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24

Internal drives for VX850 CN for SAP HANA

The following table lists the drives supported in the VX850 CN for SAP HANA. Drives are classified as either Cache drives, Capacity drives, or both.

Table 12. Drives supported in the VX850 CN for SAP HANA

Part number	Feature	Description	All Flash	All Flash	
			ESA	Cache	Capacity
2.5-inch hot-swap 24 Gb SAS SSDs					
4XB7A80318	BNWC	ThinkSystem 2.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80319	BNWE	ThinkSystem 2.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80322	BP3J	ThinkSystem 2.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD	No	No	24
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	No	24	24
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	No	24	24
4XB7A80342	BNW6	ThinkSystem 2.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD	No	24	24
4XB7A80343	BP3K	ThinkSystem 2.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD	No	24	24
2.5-inch hot-swap 6 Gb SAS SSDs					

Part number	Feature	Description	All Flash	All Flash	
			ESA	Cache	Capacity
4XB7A82289	BQ21	ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82290	BQ24	ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82291	BQ22	ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82292	BQ23	ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	No	24	24
4XB7A82259	BQ1P	ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A82260	BQ1R	ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A82261	BQ1X	ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A82262	BQ1S	ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A82263	BQ1T	ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	24
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	24
2.5-inch hot-swap PCIe 4.0 NVMe SSDs					
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24

Part number	Feature	Description	All Flash	All Flash	
			ESA	Cache	Capacity
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17136	BA4V	ThinkSystem 2.5" U.2 P5620 12.8TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A17158	BKKY	ThinkSystem 2.5" U.2 P5800X 400GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A17159	BKKZ	ThinkSystem 2.5" U.2 P5800X 800GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A17160	BMM8	ThinkSystem 2.5" U.2 P5800X 1.6TB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	No	24	24
4XB7A13970	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24
4XB7A79646	BNF3	ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	No	24
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	No	24
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24
2.5-inch hot-swap PCIe 5.0 NVMe SSDs					
4XB7A82366	BTPZ	ThinkSystem 2.5" U.3 PM1743 1.92TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24
4XB7A82367	BTQ0	ThinkSystem 2.5" U.3 PM1743 3.84TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24
4XB7A82368	BTQ1	ThinkSystem 2.5" U.3 PM1743 7.68TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24
4XB7A82369	BTQ2	ThinkSystem 2.5" U.3 PM1743 15.36TB Read Intensive NVMe PCIe 5.0 x4 HS SSD	No	No	24

Network adapters

The VX850 V3 systems support the following networking options.

For details about these options, including configuration rules, see the SR850 V3 product guide:

<https://lenovopress.lenovo.com/lp1605-thinksystem-sr850-v3-server#i-o-expansion>

<https://lenovopress.lenovo.com/lp1605-thinksystem-sr850-v3-server#network-adapters>

Table 13. OCP network adapters

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
Gigabit Ethernet				
4XC7A08235	B5T1	ThinkSystem Broadcom 5719 1GbE RJ45 4-port OCP Ethernet Adapter	2	2
10 Gb Ethernet				
4XC7A08236	B5ST	ThinkSystem Broadcom 57416 10GBASE-T 2-port OCP Ethernet Adapter	2	2
4XC7A08240	B5T4	ThinkSystem Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter	2	2
4XC7A08278	BCD5	ThinkSystem Intel X710-T2L 10GBASE-T 2-port OCP Ethernet Adapter	2	2
4XC7A80268	BPPY	ThinkSystem Intel X710-T4L 10GBase-T 4-Port OCP Ethernet Adapter	2	2
25 Gb Ethernet				
4XC7A80567	BPPW	ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port OCP Ethernet Adapter	2	2
4XC7A08237	BN2T	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-Port OCP Ethernet Adapter	2	2
4XC7A08294	BCD4	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1	1
4XC7A80269	BP8L	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port OCP Ethernet Adapter	1	1
4XC7A62582	BE4T	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port OCP Ethernet Adapter	2	2
100 Gb Ethernet				
4XC7A08243	BPPX	ThinkSystem Broadcom 57508 100GbE QSFP56 2-Port OCP Ethernet Adapter	2	2

Table 14. PCIe network adapters

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
Gigabit Ethernet				
7ZT7A00484	AUZV	ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter	11	11
7ZT7A00535	AUZW	ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter	11	11
10 Gb Ethernet				
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	12	12
4XC7A08245	B5SU	ThinkSystem Broadcom 57454 10GBASE-T 4-port PCIe Ethernet Adapter	11	11
4XC7A80266	BNWL	ThinkSystem Intel X710-T2L 10GBase-T 2-Port PCIe Ethernet Adapter	12	12
4XC7A79699	BMXB	ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter	11	11
25 Gb Ethernet				
4XC7A62580	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	5	5
4XC7A08238	BK1H	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter	12	12
4XC7A80566	BNWM	ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	4	4
4XC7A08295	BCD6	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	1	1
4XC7A80267	BP8M	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	1	1
100 Gb Ethernet				
4XC7A08248	B8PP	ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter	5	5
4XC7A08297	BK1J	ThinkSystem Broadcom 57508 100GbE QSFP56 2-port PCIe 4 Ethernet Adapter	5	5

GPU Adapters

Table 15. GPU adapters

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
Single-wide GPUs				
4X67A81547	BQZT	ThinkSystem NVIDIA A2 16GB PCIe Gen4 Passive GPU w/o CEC	4	No
4X67A84824	BS2C	ThinkSystem NVIDIA L4 24GB PCIe Gen4 Passive GPU	4	No
Double-wide GPUs				
4X67A76715	BQZP	ThinkSystem NVIDIA A100 80GB PCIe Gen4 Passive GPU w/o CEC	2	No
4X67A81102	BP04	ThinkSystem AMD Instinct MI210 PCIe Gen4 Passive Accelerator	2	No
4X67A82257	BR9U	ThinkSystem NVIDIA H100 80GB PCIe Gen5 Passive GPU	2	No
4X67A76726	BNFD	ThinkSystem NVIDIA RTX A4500 20GB PCIe Active GPU	2	No
4X67A71310	BFT0	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	2	No
4X67A84823	BT87	ThinkSystem NVIDIA L40 48GB PCIe Gen4 Passive GPU	2	No

Fibre Channel host bus adapters

Table 16. Fibre Channel host bus adapters

Part number	Feature	Description	Maximum supported	
			VX850 V3 CN	VX850 V3 HANA CN
16Gb Fibre Channel				
01CV830	ATZU	Emulex 16Gb Gen6 FC Single-port HBA	12	12
01CV840	ATZV	Emulex 16Gb Gen6 FC Dual-port HBA	12	12
01CV750	ATZB	QLogic 16Gb Enhanced Gen5 FC Single-port HBA	12	12
01CV760	ATZC	QLogic 16Gb Enhanced Gen5 FC Dual-port HBA	12	12
32Gb Fibre Channel				
4XC7A08279	BA1G	ThinkSystem QLogic QLE2770 32Gb 1-Port PCIe Fibre Channel Adapter	12	12
4XC7A08276	BA1F	ThinkSystem QLogic QLE2772 32Gb 2-Port PCIe Fibre Channel Adapter	12	12
4XC7A76498	BJ3G	ThinkSystem Emulex LPe35000 32Gb 1-port PCIe Fibre Channel Adapter v2	12	12
4XC7A76525	BJ3H	ThinkSystem Emulex LPe35002 32Gb 2-port PCIe Fibre Channel Adapter V2	12	12
64Gb Fibre Channel				
4XC7A77485	BLC1	ThinkSystem Emulex LPe36002 64Gb 2-port PCIe Fibre Channel Adapter	12	12

Operating system support

The ThinkAgile VX850 V3 Certified Node supports the following operating systems:

- VMware ESXi 8.0 U1

The ThinkAgile VX850 V3 SAP Certified Node supports the following operating systems:

- VMware ESXi 8.0 U1

Configuration Note:

VMware vSAN certification for Generic NVMe drives: The drives are listed in the [VMware Compatibility Guide](#) (VCG) under the drive vendor company name instead of Lenovo. To check a drive for vSAN certification, search the VCG using the Supplier part number. Part numbers can be found using the Product Guide for the corresponding Drive Family on Lenovo Press

https://lenovopress.lenovo.com/servers/options/drives#sort=last_update.

For further details, including any restrictions, see the OS Interoperability Guide:

<https://lenovopress.lenovo.com/osig#term=vx&support=all>

Software

VMware vSAN, vSphere, and vCenter Server software are required for ThinkAgile VX Series Integrated Systems and Certified Nodes. For Integrated Systems, you are required to purchase VMware vSAN licenses for VX Series from Lenovo. Customers have the option to transfer the license after it has initially landed on Lenovo VX Integrated System. For Certified Nodes, you can purchase the vSAN licenses from Lenovo or from VMware, or you can use your existing licenses. For vSphere and vCenter Server, you can use the existing VMware software licenses and active support contracts, or you can purchase software licenses and support from Lenovo or VMware.

Lenovo offers the following VMware software license and support options for ThinkAgile VX Series systems:

- VMware vSAN License and Subscription
- VMware vSphere License and Subscription
- VMware HCI Kit License and Subscription
- VMware Horizon License and Subscription
- VMware Cloud Foundation License and Subscription
- VMware vCenter Server License and Subscription

For details and ordering information, see the VMware Software Solution Product Guide:

<https://lenovopress.com/lp1265-vmware-software-solution-product-guide>

Configuration notes:

- The selection of vSAN licenses on Integrated Systems is required: Standalone licenses, HCI bundle licenses, VDI solution licenses, or VCF licenses.
- VMware software licenses that are available for selection include 1-year, 3-year, or 5-year software support (matches the duration of the selected solution-level warranty period).
- The quantity of processor-based licenses is derived by the configuration tool based on the number of processors selected.
- The quantity of VM-based licenses is specified based on VM requirements.
- The quantity of CCU-based licenses is specified based on the concurrent user requirements.

For the VX 850 V3 Certified Node for SAP HANA, HANA software licenses are purchased separately from SAP. Also, SUSE Linux Enterprise Server or Red Hat Enterprise Linux Server licenses are needed for deploying virtual machines for the SAP HANA virtualized environment. Optional Lenovo Professional Services are available to deploy SAP HANA software stack at the customer site.

Warranty and Support

The VX850 V3 have a 3-year warranty based on the machine type:

- 7DDK - 3 year warranty

The ThinkAgile VX850 V3 Series can be configured with a three- or five-year hardware warranty with 24x7 ThinkAgile Premier Support that provides Single Point of Support (Lenovo server hardware and VMware software; requires an active software support contract purchased either from VMware or Lenovo) and various levels of coverage with a well-defined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

The Lenovo local support centers perform problem determination and resolution for hardware-related issues and escalate to VMware, on behalf of the customer, for software-related problem determination. VMware will contact the customer and will own the software-related problem resolution until closure.

The standard warranty terms are customer-replaceable unit (CRU) and onsite (for field-replaceable units FRUs only) with standard call center support during normal business hours and 9x5 Next Business Day Parts Delivered.

Lenovo's additional support services provide a sophisticated, unified support structure for your data center, with an experience consistently ranked number one in customer satisfaction worldwide. Available offerings include:

- **Premier Support**

Premier Support provides a Lenovo-owned customer experience and delivers direct access to technicians skilled in hardware, software, and advanced troubleshooting, in addition to the following:

- Direct technician-to-technician access through a dedicated phone line
- 24x7x365 remote support
- Single point of contact service
- End to end case management
- Third-party collaborative software support
- Online case tools and live chat support
- On-demand remote system analysis

- **Warranty Upgrade (Preconfigured Support)**

Services are available to meet the on-site response time targets that match the criticality of your systems.

- 3, 4, or 5 years of service coverage
- 1-year or 2-year post-warranty extensions
- **Foundation Service:** 9x5 service coverage with next business day onsite response. YourDrive YourData is an optional extra (see below).
- **Essential Service:** 24x7 service coverage with 4-hour onsite response or 24-hour committed repair (available only in select markets). Bundled with YourDrive YourData.
- **Advanced Service:** 24x7 service coverage with 2-hour onsite response or 6-hour committed repair (available only in select markets). Bundled with YourDrive YourData.

- **Managed Services**

Lenovo Managed Services provides continuous 24x7 remote monitoring (plus 24x7 call center availability) and proactive management of your data center using state-of-the-art tools, systems, and practices by a team of highly skilled and experienced Lenovo services professionals.

Quarterly reviews check error logs, verify firmware & OS device driver levels, and software as needed. We'll also maintain records of latest patches, critical updates, and firmware levels, to ensure you systems are providing business value through optimized performance.

- **Technical Account Management (TAM)**

A Lenovo Technical Account Manager helps you optimize the operation of your data center based on a deep understanding of your business. You gain direct access to your Lenovo TAM, who serves as your single point of contact to expedite service requests, provide status updates, and furnish reports to track incidents over time. In addition, your TAM will help proactively make service recommendations and manage your service relationship with Lenovo to make certain your needs are met.

- **Enterprise Server Software Support**

Enterprise Software Support is an additional support service providing customers with software support on Microsoft, Red Hat, SUSE, and VMware applications and systems. Around the clock availability for critical problems plus unlimited calls and incidents helps customers address challenges fast, without incremental costs. Support staff can answer troubleshooting and diagnostic questions, address product comparability and interoperability issues, isolate causes of problems, report defects to software vendors, and more.

- **YourDrive YourData**

Lenovo's YourDrive YourData is a multi-drive retention offering that ensures your data is always under your control, regardless of the number of drives that are installed in your Lenovo server. In the unlikely event of a drive failure, you retain possession of your drive while Lenovo replaces the failed drive part. Your data stays safely on your premises, in your hands. The YourDrive YourData service can be purchased in convenient bundles and is optional with Foundation Service. It is bundled with Essential Service and Advanced Service.

- **Health Check**

Having a trusted partner who can perform regular and detailed health checks is central to maintaining efficiency and ensuring that your systems and business are always running at their best. Health Check supports Lenovo-branded server, storage, and networking devices, as well as select Lenovo-supported products from other vendors that are sold by Lenovo or a Lenovo-Authorized Reseller.

Examples of region-specific warranty terms are second or longer business day parts delivery or parts-only base warranty.

If warranty terms and conditions include onsite labor for repair or replacement of parts, Lenovo will dispatch a service technician to the customer site to perform the replacement. Onsite labor under base warranty is limited to labor for replacement of parts that have been determined to be field-replaceable units (FRUs). Parts that are determined to be customer-replaceable units (CRUs) do not include onsite labor under base warranty.

If warranty terms include parts-only base warranty, Lenovo is responsible for delivering only replacement parts that are under base warranty (including FRUs) that will be sent to a requested location for self-service. Parts-only service does not include a service technician being dispatched onsite. Parts must be changed at customer's own cost and labor and defective parts must be returned following the instructions supplied with the spare parts.

Lenovo Service offerings are region-specific. Not all preconfigured support and upgrade options are available in every region. For information about Lenovo service upgrade offerings that are available in your region, refer to the following resources:

- Service part numbers in Lenovo Data Center Solution Configurator (DCSC):
<http://dcsc.lenovo.com/#/services>
- Lenovo Services Availability Locator
<http://lenovolocator.com/>

For service definitions, region-specific details, and service limitations, please refer to the following documents:

- Lenovo Statement of Limited Warranty for Infrastructure Solutions Group (ISG) Servers and System Storage
<http://pcsupport.lenovo.com/us/en/solutions/ht503310>
- Lenovo Data Center Services Agreement
<http://support.lenovo.com/us/en/solutions/ht116628>

Software maintenance

The ThinkAgile VX certified node can include one- (PRC only), three-, or five-year software support and subscription (matches the duration of the selected warranty period) that entitles customers to submit service requests to troubleshoot VMware software issues and receive code updates, including fixes, patches, and new software releases.

The Lenovo local support centers perform problem determination and resolution for hardware-related issues and escalate to VMware, on behalf of the customer, for software-related problem determination. VMware will contact the customer and will own the software-related problem resolution until closure.

For the VMware vSphere, vSAN, and vCenter Server software and subscription licenses purchased from Lenovo together with the ThinkAgile VX Series Integrated Systems, software support that is provided by VMware includes Production-level support with 24x7 phone and web coverage with the following target response times (priorities are defined by VMware based on the impact on productivity):

- Severity 1 (Critical: Substantial loss or disruption of service, significant risk of data loss): 30 minutes
- Severity 2 (Major: Operations are severely constrained, significant impact): 4 business hours
- Severity 3 (Minor: Non-critical loss of functionality, minimal impact): 8 business hours
- Severity 4 (Cosmetic: General questions): 12 business hours

For the VMware software and subscription licenses provided by the customer, software support that is provided by VMware is based on the support level included with these licenses.

Deployment services

The following optional Lenovo basic installation services are available for the ThinkAgile VX Series certified nodes:

- Unpacking and inspecting the systems
- Mounting the systems in a rack cabinet
- Connecting the systems to electrical power and network
- Checking and updating firmware to the latest levels
- Verifying operations
- Disposal of the packaging materials (within the customer site)

The following Lenovo deployment services are available for the ThinkAgile VX Series Integrated Systems to get customers up and running quickly:

- Conducting remote preparation and planning
- Verifying firmware versions and performing firmware updates, if needed
- Configuring XCC management settings
- Configuring hypervisor settings
- Configuring vSAN
- Configuring VMware vCenter Server and discovering hosts and storage
- Configuring Lenovo XClarity network settings and performing discovery and inventory
- Transferring knowledge
- Developing post-installation documentation

The following table lists ThinkAgile Health Check & Deployment offerings that are available for ThinkAgile VX customers. These offerings are performed by Lenovo Professional Services.

- **Onsite Deployment:** Install, configure, and validate solutions on-site, and conduct knowledge transfer.
- **Remote Deployment:** Install, configure, and validate solution remotely, and conduct knowledge transfer.
- **Remote Health Check:** Report & remediation of hardware and cluster health issues, including firmware and software updates.

Table 17. ThinkAgile Deployment offerings

Part number	Description
Onsite deployment services	
5MS7B00082	ThinkAgile VX Onsite Deployment (up to 4 nodes)
5MS7B00083	ThinkAgile VX Onsite Deployment (additional node)
Remote deployment services	
5MS7A87711	ThinkAgile VX Remote Deployment (up to 4 nodes)
5MS7A87712	ThinkAgile VX Remote Deployment (additional node)
Remote Health Check	
5MS7B00178	ThinkAgile VX 1X Remote Health Check (up to 4 node cluster)
5MS7B00179	ThinkAgile VX 1X Remote Health Check (additional node)
5MS7B00059	ThinkAgile VX 1X Remote Health Check & Update (up to 4 node cluster)
5MS7B00060	ThinkAgile VX 1X Remote Health Check & Update (additional node)

For more information, refer to the Data Center Implementation Services web page:
<https://www.lenovo.com/us/en/data-center/services/implementation-services/>

The SAP HANA onsite deployment that is provided by Lenovo Professional Services is optional for the ThinkAgile VX850 V3 Certified Node for SAP HANA.

Regulatory compliance

The VX850 V3 conform to the following standards:

- ANSI/UL 62368-1
- IEC 62368-1 (CB Certificate and CB Test Report)
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- CSA C22.2 No. 62368-1
- CISPR 32, Class A, CISPR 35
- Argentina IEC 60950-1
- Japan VCCI, Class A
- Taiwan BSMI CNS15936, Class A; CNS15598-1; Section 5 of CNS15663
- CE, UKCA Mark (EN55032 Class A, EN62368-1, EN55024, EN55035, EN61000-3-2, EN61000-3-3, (EU) 2019/424, and EN IEC 63000 (RoHS))
- Korea KN32, Class A, KN35
- Russia, Belorussia and Kazakhstan, TP EAC 037/2016 (for RoHS)
- Russia, Belorussia and Kazakhstan, EAC: TP TC 004/2011 (for Safety); TP TC 020/2011 (for EMC)
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 62368.1
- Energy Star 3.0
- China CELP certificate, HJ 2507-2011
- Japanese Energy-Saving Act
- Mexico NOM-019
- TUV-GS (EN62368-1, and EK1-ITB2000)
- India BIS 13252 (Part 1)
- EU2019/424 Energy Related Product (ErP Lot9)

Lenovo Financial Services

Lenovo Financial Services reinforces Lenovo's commitment to deliver pioneering products and services that are recognized for their quality, excellence, and trustworthiness. Lenovo Financial Services offers financing solutions and services that complement your technology solution anywhere in the world.

We are dedicated to delivering a positive finance experience for customers like you who want to maximize your purchase power by obtaining the technology you need today, protect against technology obsolescence, and preserve your capital for other uses.

We work with businesses, non-profit organizations, governments and educational institutions to finance their entire technology solution. We focus on making it easy to do business with us. Our highly experienced team of finance professionals operates in a work culture that emphasizes the importance of providing outstanding customer service. Our systems, processes and flexible policies support our goal of providing customers with a positive experience.

We finance your entire solution. Unlike others, we allow you to bundle everything you need from hardware and software to service contracts, installation costs, training fees, and sales tax. If you decide weeks or months later to add to your solution, we can consolidate everything into a single invoice.

Our Premier Client services provide large accounts with special handling services to ensure these complex transactions are serviced properly. As a premier client, you have a dedicated finance specialist who manages your account through its life, from first invoice through asset return or purchase. This specialist develops an in-depth understanding of your invoice and payment requirements. For you, this dedication provides a high-quality, easy, and positive financing experience.

For your region-specific offers, please ask your Lenovo sales representative or your technology provider about the use of Lenovo Financial Services. For more information, see the following Lenovo website:

<https://www.lenovo.com/us/en/landingpage/lenovo-financial-services/>

Seller training courses

The following sales training courses are offered for employees and partners (login required). Courses are listed in date order.

1. **Lenovo Data Center Product Portfolio**
2024-04-22 | 20 minutes | Employees and Partners

This course introduces the Lenovo data center portfolio, and covers servers, storage, storage networking, and software-defined infrastructure products. After completing this course about Lenovo data center products, you will be able to identify product types within each data center family, describe Lenovo innovations that this product family or category uses, and recognize when a specific product should be selected.

Published: 2024-04-22

Length: 20 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW1110r7

2. **VTT Cloud and Edge Architecture: Principal Consultant Overview**

2024-04-10 | 50 minutes | Employees Only

Join Ruth Miller, Lenovo Principal Consultant, SSG Services for a data-led discussions to examine in detail customer IT environments, highlighting pain points, performance issues, edge and hybrid cloud strategy and carbon reduction capability.

Examples of workshop deliverables and outcomes will be discussed to illustrate the value of early engagement and discovery.

Published: 2024-04-10

Length: 50 minutes

Employee link: Grow@Lenovo

Course code: DVCLD211

3. **VTT Data Management How to sell storage - April 2024**

2024-04-10 | 60 minutes | Employees Only

In this course, you will know:

- Why do we sell storage?
- What are the basics you need to get an opportunity rolling?
- Why Lenovo for Storage?
- What is happening in the market today?
- How to determine traction?

Published: 2024-04-10

Length: 60 minutes

Employee link: Grow@Lenovo

Course code: DVDAT209

4. **ThinkAgile VX – How to sell**

2024-03-21 | 15 minutes | Employees and Partners

This module will introduce you to the ThinkAgile VX product line. It also introduces the latest updates to the VMware software packages available with the ThinkAgile VX product line.

Published: 2024-03-21

Length: 15 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: DVXS100

5. **Data management Overview**

2024-03-14 | 25 minutes | Employees and Partners

After completing this course you will be able to:

1. Know more about the data management trends and challenges
2. Understand the data management portfolio
3. Find out how data drives business value

Published: 2024-03-14

Length: 25 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: DSTOO201

6. **Technical Overview: ThinkAgile HCI and Cloud Platforms**

2024-03-07 | 35 minutes | Employees and Partners

This course is designed to give Lenovo sales and partner representatives a technical overview of Lenovo's ThinkAgile hyperconverged infrastructure and cloud platforms. Turnkey cloud platforms along with their architectural makeup, and container and data protection solutions are also covered.

Learning Objectives:

- Describe Lenovo's ThinkAgile hyperconverged infrastructure and cloud platforms
- Explain do-it-yourself and turnkey cloud platforms along with their architectural makeup
- Describe container and data protection solutions

Published: 2024-03-07

Length: 35 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DCLDT2001r3

7. **ThinkAgile VX in 3 minutes**

2024-02-01 | 5 minutes | Employees and Partners

Learn about ThinkAgile VX in under 3 minutes. The business challenges it solves and how it can increase the size of your sales opportunities.

By the end of this training, you should be able to:

- 1) Learn how to sell Lenovo ThinkAgile VX
- 2) Describe what differentiates ThinkAgile VX from other VMware offerings

Published: 2024-02-01

Length: 5 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DVXS101

8. **Lightboard – ThinkAgile VX Enhancements**

2024-01-30 | 10 minutes | Employees and Partners

In this Part 2 lightboard video, Srihari Angaluri, Principal Engineer SDI, further discusses high-level enhancements to ThinkAgile VX. He also walks you through Day 0, Day 2 deployment, lifecycle management, and vRealize integration and the value it can provide to your customers.

By the end of this training, you should be able to:

- 1) Understand the key components and functionalities of the Think Agile VX Hyperconverged Infrastructure Portfolio
- 2) Apply the knowledge gained to assess and recommend strategies for efficiently deploying and managing VMware vCenter environments using the ThinkAgile VX platform

Published: 2024-01-30

Length: 10 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DVXS104

9. **Lightboard – ThinkAgile VX Enhancements**

2024-01-30 | 10 minutes | Employees and Partners

In this Part One lightboard video, Mike McDermott, Senior Product Manager, SDI walks you through ThinkAgile VX product changes and enhancements. The three different types of ThinkAgile VX offerings are defined and the differences between each, allowing you to understand the best option for your customers.

By the end of this training, you should be able to:

- 1) Describe the key features and benefits of ThinkAgile VX
- 2) Effectively communicate the competitive advantages of ThinkAgile VX

Published: 2024-01-30

Length: 10 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: DVXS103

10. **Family Introduction: Converged and Hyperconverged**

2024-01-25 | 15 minutes | Employees and Partners

This course is designed to give Lenovo sales a foundation on the characteristics of the Converged and Hyperconverged family. As an introduction to each family, this course also includes positioning, when to use a family and product, and keywords a client may use when discussing a converged or hyperconverged product.

Objectives:

- Family characteristics
- Priority positioning
- Product usage
- Key words and phrases

Published: 2024-01-25

Length: 15 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: SXSW1101r2

11. **VTT Cloud Architecture: Future-Ready AI Infrastructure Edge to Cloud Transformation**

2024-01-09 | 60 minutes | Employees Only

Join Asmaa El Andaloussi, Lenovo Enterprise Architect and Muhammad Toffaha, Lenovo Advisory Technical Consultant as they discuss the digital transformation that is driving the demand for a new class of infrastructure for organization from edge to cloud and are ready to embrace IT modernization and AI. In this session, the main spotlight will be on AI workload on Virtual GPU with ThinkAgile VX paired with VMware Cloud Foundation, featuring state-of-the-art NVIDIA GPUs for high performance.

Published: 2024-01-09

Length: 60 minutes

Employee link: Grow@Lenovo

Course code: DVCLD208

12. Partner Technical Webinar - VxRail Takeout

2024-01-09 | 60 minutes | Employees and Partners

in this 60-minute replay, Mat Remillard, Lenovo VMware CTO for NA and former VxRail Architect, presented what VxRail is, where Lenovo's advantages lie and some use cases where we should target.

Published: 2024-01-09

Length: 60 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: 010524

13. Lenovo Solutions for the Cloud

2024-01-03 | 30 minutes | Employees and Partners

Understanding your customer's needs around cloud solutions is imperative. This course aims to increase Lenovo and Partner Seller's ability to identify various Lenovo Cloud offerings and services to position related Lenovo Cloud Solutions.

Published: 2024-01-03

Length: 30 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DCLDO112r2

14. FY24Q3 Hybrid Cloud Update

2023-12-11 | 15 minutes | Employees and Partners

This update is designed to help you discuss the features and customer benefits of Lenovo ThinkAgile systems that use the 5th Gen Intel® Xeon® processors. Lenovo has also introduced a new service, Lenovo TruScale Hybrid Cloud for Edge, which provides agile and reliable infrastructure as a service where you need it, when you need it. New Professional Services for AI with NVIDIA provides customers with expert guidance for designing and implementing tailored AI solutions. Reasons to call your customer and talk about refreshing their infrastructure are also included as a guideline.

Published: 2023-12-11

Length: 15 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW2523a

15. VTT Introducing VMware's vSAN Max - November 2023

2023-11-22 | 60 minutes | Employees Only

- Introducing vSAN Max powered by vSAN ESA
- Use cases ideal for vSAN Max
- vSAN Max Provisioning and Connectivity

Published: 2023-11-22

Length: 60 minutes

Employee link: [Grow@Lenovo](#)

Course code: DVDAT206

16. VTT Cloud Architecture - VMware Hybrid Cloud Solutions for Mid-Markets and Enterprises
2023-11-14 | 80 minutes | Employees Only

Please join Jeff Huxtable, Lenovo Solutions Marketing Manager, and a number of speakers from Lenovo, VMware and Intel for an open discussion on a high-level overview of the Lenovo and VMware Hybrid Cloud solution and the tools available to properly size, test, and configure the solution. We will review the new Sales Play, deployment ready configurations, “holodeck” POC site, demos/tours, reference architectures, configuration guides, professional services, and technical documents available to you in support of this solution.

Published: 2023-11-14

Length: 80 minutes

Employee link: [Grow@Lenovo](#)

Course code: DVCLD206

17. VTT Cloud Architecture: Google Cloud Platform with Anthos on ThinkAgile VX - October 2023
2023-10-11 | 54 minutes | Employees and Partners

Join Chandrakandh Mouleeswaran, Lenovo Senior Software Engineer and Cristian Ghetau, Lenovo Software Engineer for a discussion on Google Cloud Platform (GCP) with Anthos solution based on the Lenovo ThinkAgile VX VMware vSAN certified platform. They will cover a technical overview of Google Kubernetes Engine (GKE) On-prem, which is a containerized workload orchestration software. We will cover the functional aspects of Anthos core components including the Kubernetes, Istio service mesh, Anthos config management, Hybrid and multi-cloud management, and Google cloud marketplace. We will also provide an architecture overview and deployment of Anthos on top of Lenovo ThinkAgile VX hyperconverged infrastructure (HCI) platform. Cristian and Chandrakandh will cover customer use cases for Anthos, including Continuous Integration/Continuous Delivery (CI/CD), Micro-services and Service Mesh, Hybrid Cloud and Multi-cloud management, and Anthos Config Management.

Published: 2023-10-11

Length: 54 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DVCLD205

18. VEEAM Solutions Sales Training
2023-09-27 | 20 minutes | Employees and Partners

In this course you will learn about Hyper-availability for the Always-On Enterprise.

By the end of this training, you should be able to:

Identify and explain the core products and solutions offered by Veeam.

Explain the key benefits and value propositions of integrating Veeam solutions with Lenovo products.

Published: 2023-09-27

Length: 20 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DSTOO100

19. VTT Cloud Architecture - Application Migration September 2023

2023-09-12 | 35 minutes | Employees Only

This VTT Cloud Architecture training aims to equip participants with the knowledge necessary to help your customers successfully migrate applications to a cloud infrastructure. With the increasing adoption of cloud computing, organizations are looking to harness the benefits of private and hybrid clouds, such as enhanced security, control, and customization. However, migrating applications to cloud requires careful planning, architectural considerations, and a deep understanding of the migration process.

In this training, we will delve into cloud infrastructure and learn about the key components involved in application migration. We will explore various migration strategies, including lift-and-shift, re-platforming, and re-architecting, and understand the factors that influence the selection of an appropriate migration approach. We will also cover best practices for evaluating application readiness, assessing dependencies, identifying potential challenges and risks, and solution design considerations.

We will discuss using migration tools, technologies specific to cloud environments and automation techniques for streamlining the migration process, ensuring minimal disruption to business operations.

Published: 2023-09-12

Length: 35 minutes

Employee link: Grow@Lenovo

Course code: DVCLD204

20. VTT Cloud Architecture - DevOps Cloud Story August 2023

2023-08-17 | 60 minutes | Employees Only

Understanding how architecture is deployed to support DevOps environment in the cloud. Tanzu/Containers vs VM's. When it best to use each? Modern Application deployment in containers. In the beginning, public cloud IaaS was delivered exclusively via virtual machines. But today, new virtualization methods are taking hold, including containers and serverless computing. As cloud computing principles become more embedded in application development and infrastructure operations, containers and serverless will become increasingly attractive deployment vehicles for code. From requirements to installation.

Published: 2023-08-17

Length: 60 minutes

Employee link: Grow@Lenovo

Course code: DVCLD203

21. ThinkAgile Accelerating Cloud Agility: Understanding ThinkAgile VX

2023-07-28 | 50 minutes | Employees and Partners

Brian Faleiro, Lenovo Technical Product Manager, discusses ThinkAgile VX use cases, where the solution can be positioned. He reviews recent technical improvements and discusses deployment and lifecycle management, 'why ThinkAgile VX', what are the requirements that customers are looking for and how we are solving those requirements.

Published: 2023-07-28

Length: 50 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: DVXT201

22. Lenovo Data Center Product Portfolio

2023-07-21 | 15 minutes | Employees and Partners

This course introduces the Lenovo data center portfolio, and covers servers, storage, storage networking, and software-defined infrastructure products. After completing this course about Lenovo data center products, you will be able to identify product types within each data center family, describe Lenovo innovations that this product family or category uses, and recognize when a specific product should be selected.

Published: 2023-07-21

Length: 15 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXXW1110r6

23. VTT: SAP HANA Transition and Refresh Opportunity - July 2023

2023-07-14 | 60 minutes | Employees Only

In this session, we cover:

- What Next for SAP Clients?
- Lenovo Opportunity
- Lenovo Portfolio for SAP Solutions
- RISE with SAP

Published: 2023-07-14

Length: 60 minutes

Employee link: [Grow@Lenovo](#)

Course code: DVDAT202

24. ThinkAgile VX Series - Technical Presentation

2023-07-12 | 60 minutes | Employees and Partners

Join us in this comprehensive course on ThinkAgile VX Series, where you will gain a deep understanding of its technical overview and components. Dive into the world of Data Processing Units (DPUs) and explore their technical aspects, including their role and benefits. Unlock the potential of ThinkAgile VX Series through a detailed exploration of its versatile use cases, ranging from Hybrid Cloud deployment to VDI, Kubernetes, and AI/ML applications. Moreover, you will learn about effective deployment strategies and lifecycle management processes.

By the end of this training, you should be able to:

- Understand the technical overview of ThinkAgile VX Series
- Gain knowledge about DPU (Data Processing Unit) and its technical aspects
- Explore various use cases of ThinkAgile VX Series, including Hybrid Cloud deployment, VDI (Virtual Desktop Infrastructure), Kubernetes, and AI/ML (Artificial Intelligence/Machine Learning)
- Describe deployment strategies and lifecycle management processes for ThinkAgile VX Series

Published: 2023-07-12

Length: 60 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DVXSV104

25. **VTT Cloud Architecture - Why Cloud? July 2023**

2023-07-12 | 90 minutes | Employees Only

Theresa Thompson and Luke Huckaba from VMware discuss the VMware and Lenovo Partnership for cloud solutions addresses common IT constraints, such as slow time to value, limited resources and incompatible systems. Cloud is an enabler of digital business. How do we reduce the operational burden of running and maintaining hardware and software for cloud and prepare our customers for workload migrations and which are suitable for a cloud environment. How to align cloud Initiative outcomes with business goals.

Published: 2023-07-12

Length: 90 minutes

Employee link: [Grow@Lenovo](#)

Course code: DVCLD202

26. **Cloud and HCI or Somewhere in Between**

2023-07-11 | 40 minutes | Employees and Partners

Provides a brief overview of Lenovo Portfolio for HCI and Cloud including ThinkAgile HX, VX, MX Certified Nodes and Appliances, Azure, and Engineered Cloud Solutions. Review Scenarios and complete questions "choose your own adventure" to identify and qualify an opportunity as HCI or Cloud and which portfolio solution would be the best option.

Course objectives:

- Where in the Sales Cycle we are
- What is Cloud
- What is Hyperconverged Infrastructure (HCI)
- Review Lenovo Offerings in Cloud and HCI
- Scenarios

Published: 2023-07-11

Length: 40 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DCLDS104r2

27. **Partner Technical Webinar - HX vs VX vs MX Panelist Discussion**

2023-04-11 | 60 minutes | Employees and Partners

In this 60-minute replay, Joe Murphy moderated a panelist discussion on ThinkAgile SHI. Baker Hull, VMware represented VX; Mike Tilt, Lenovo Technical Sales Manager presented HX; Phil Searles, Lenovo Solution Architect represented MX; and Brandon Saxton Lenovo NA Product Manager for ThinkAgile made up the panelist. The focus was less on the differences but how to elevate the conversation to get to the best solution. No slides were presented.

Published: 2023-04-11

Length: 60 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: 033123

28. **ThinkAgile VX & VMware**

2023-03-07 | 15 minutes | Employees and Partners

In this lightboard presentation, Mike McDermott explains the changes done in the last months for the elements of ThinkAgile VX: Ready nodes, Certified Node and Integrated Systems.

Upon completion of the training, you will be able to:

- Explain ThinkSystem Ready Node
- Explain ThinkAgile VX Certified Node
- Explain ThinkAgile VX Integrated Node
- Explain Lenovo TruScale

Published: 2023-03-07

Length: 15 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: DVXS118

29. **Family Portfolio: ThinkAgile VX**

2023-02-28 | 20 minutes | Employees and Partners

This course is an introduction to Lenovo ThinkAgile VX Integrated Systems (previously called appliances) and Certified Nodes. The course includes systems based on the Intel and AMD Gen4 processors, and includes the new VX naming convention.

You will learn to identify products and features within the Lenovo ThinkAgile VX family, describe Lenovo innovations that the ThinkAgile VX family uses, and recognize when a specific product or products should be selected.

Published: 2023-02-28

Length: 20 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: SXSW2130r4

30. **Partner Technical Webinar - ThinkAgile V3 Overview and SMB Express**

2023-02-13 | 60 minutes | Employees and Partners

In this 60-minute replay, Joe Murphy and Dave Brown, Lenovo Solution Architects reviewed the new ThinkAgile V3 solutions. In addition, Dave did a lengthy demo and explanation of the new SMB Express feature of DCSC.

Published: 2023-02-13

Length: 60 minutes

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo Partner Learning](#)

Course code: 021023

31. **Lenovo ThinkAgile VX Customer Presentation**

2022-10-31 | 25 minutes | Employees Only

This presentation serves as an enablement guide on how to pitch ThinkAgile VX to a client. If you are not familiar with ThinkAgile VX, it will also help you learn more about our ThinkAgile VX HCI solution and the market in which it competes.

By the end of this course, you will be able to:

- Understand how to pitch ThinkAgile VX to a client.
- Describe our ThinkAgile VX HCI Solution and the market in which it competes.

Published: 2022-10-31

Length: 25 minutes

Employee link: Grow@Lenovo

Course code: DVXCP101

32. **Lenovo ThinkAgile VX Seller Presentation**

2022-10-31 | 23 minutes | Employees Only

This presentation is an introductory course on how to position and sell ThinkAgile VX, which is Lenovo's Hyperconverged solution for VMware environments.

By the end of this course, you will be able to:

- Understand customer profiles and how to position ThinkAgile VX.
- Describe the sales process for ThinkAgile VX.
- Identify sales tactics, tools and resources that can help you win.

Published: 2022-10-31

Length: 23 minutes

Employee link: Grow@Lenovo

Course code: DVXSP101

33. **Partner Technical Webinar - ThinkAgile VX vs VxRail**

2022-10-25 | 60 minutes | Partners Only

In this 60-minute replay, Arrow Solution Architect Todd Frederking discussed Lenovo ThinkAgile VX strengths over VxRail and how to capitalize on VxRail weakness. A live demo of the ThinkAgile VX interface was also shared with the audience.

Published: 2022-10-25

Length: 60 minutes

Partner link: [Lenovo Partner Learning](#)

Course code: 102122

34. **Lenovo's value-added Solutions Software and SDI - ThinkAgile VX Sales Process and Overview**

2022-08-22 | 60 minutes | Employees Only

In this continuous series of recorded webinars for ThinkAgile Portfolio Sales Process, Mike Tilt, Sales Engineer Director, discusses with the North American region, the overview of ThinkAgile VX sales process. He discusses the differences between the two VMware Solution options and reviews common FAQ and audience questions.

Published: 2022-08-22

Length: 60 minutes

Employee link: Grow@Lenovo

Course code: DCLDO123

35. **Partner Technical Webinar - sizing ThinkAgile HX & VX**

2022-08-01 | 60 minutes | Partners Only

In this 60-minute replay, we demonstrated how to size ThinkAgile VX and ThinkAgile HX. First Lenovo Solution Architect Joe Murphy reviewed the sizing methodology. Next, Lenovo Solution Architect Richard Smutzer demonstrated how to size ThinkAgile HX using Nutanix's sizing tool. Lenovo Solution Architect David Cianchetta closed the webinar by demonstrating ThinkAgile VX sizing using the VSAN sizer from VMware.

Published: 2022-08-01

Length: 60 minutes

Partner link: [Lenovo Partner Learning](#)

Course code: 072922

36. **ThinkAgile Advantage Services**

2022-07-20 | 15 minutes | Employees and Partners

The goal of this training is to go through the details of ThinkAgile Advantage, and to provide everything you need to have customer conversations and to order ThinkAgile Advantage and recommended services.

Course objectives:

1. Learn about the customer challenges and benefits of ThinkAgile Advantage
2. Discover what it includes
3. Understand how to make the most of ThinkAgile products and solutions with the elevator pitch for customer conversations.

Published: 2022-07-20

Length: 15 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: DSVC121r2

37. **Start the Conversation - Lenovo Cloud Strategy**

2021-10-25 | 25 minutes | Employees and Partners

The purpose of this course is to help sellers use the Lenovo cloud strategy as a foundation to start the customer cloud conversation. Topics include:

- Why customers choose the cloud
- The Lenovo Cloud Strategy
- Starting the customer cloud conversation

Published: 2021-10-25

Length: 25 minutes

Employee link: Grow@Lenovo

Partner link: [Lenovo Partner Learning](#)

Course code: DCLDS103r2

Related publications and links

For more information, see these resources:

- Lenovo ThinkAgile VX Series
<https://www.lenovo.com/us/en/data-center/software-defined-infrastructure/ThinkAgile-VX-Series/p/WMD00000340>
- ThinkAgile VX - Best Recipes
<http://datacentersupport.lenovo.com/us/en/solutions/HT505302>
- VMware documentation
<https://docs.vmware.com/>
- ThinkSystem SR850 V3 product guide:
<https://lenovopress.lenovo.com/lp1605-thinksystem-sr850-v3-server>

Related product families

Product families related to this document are the following:

- [4-Socket Rack Servers](#)
- [Hyperconverged Infrastructure](#)
- [Hyperconverged Infrastructure](#)
- [ThinkAgile VX Series for VMware](#)

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