Lenovo ThinkAgile VX655 V3 2U Certified Node (AMD EPYC 9004)

Product Guide

The Lenovo ThinkAgile VX655 V3 Certified Node is a 1-socket 2U systems that features the AMD EPYC 9004 Series "Genoa" family of processors. With up to 96 cores per processor and support for the new PCIe 5.0 standard for I/O, the VX systems offer the ultimate in one-socket performance in a 2U form factor. VMware offers a unique, software-defined approach to hyper convergence, leveraging the hypervisor to deliver compute, storage, networking and management in a tightly integrated software stack.

Suggested uses: Inference, virtualization, VDI, HPC, Hyperconverged infrastructure

Figure 1. Lenovo ThinkAgile VX with 2.5-inch drive bays

Did you know?

The ThinkAgile VX655 V3 Certified Node is built on the Lenovo ThinkSystem SR655 v3 server that features enterprise-class reliability, management, and security.

The VX655 V3 certified node comes preinstalled with VMware software. XClarity Integrator acting as the Hardware Support manager (HSM) for the vSphere Life Cycle Manager (vLCM), handles lifecycle management of both software and firmware updates via a single pane of glass that fully integrates VMware tools. The VX certified node offers ThinkAgile Premier Support for quick 24/7 problem reporting and resolution.

The systems have been designed to take advantage of the features of the AMD EPYC 9004 Series "Genoa" family of processors, such as the full performance of 96-core processors, support for 4800 MHz memory and PCIe Gen 5.0 support.

The VX655 V3 Certified Node delivers greater virtualized workload consolidation with higher core count, GPU support and easy-to-use lifecycle management console.

Key features

ThinkAgile features

The ThinkAgile VX655 V3 Certified Node offers the following key features:

- Factory-integrated, pre-configured certified node 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.
- Provides a 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.
- Optional Lenovo deployment services to get customers up and running quickly.

The VMware software running on ThinkAgile VX655 V3 Certified Node 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 VX655 V3 are based on the SR655 V3 and have the following hardware features

Scalability and performance

The VX655 V3 offer numerous features to boost performance, improve scalability and reduce costs:

- Supports the AMD EPYC 9004 family of processors
- Supports processors with up to 96 cores and 192 threads, core speeds of up to 3.6 GHz, and TDP ratings of up to 360W.
- Support for up to 12 TruDDR5 memory DIMMs with one processor. With 1 DIMM installed per channel (12 DIMMs total), memory operates at 4800 MHz.
- Using 128GB 3DS RDIMMs, the server supports up to 1.5TB of system memory.
- Supports up to eight single-width GPUs, each up to 75W for substantial processing power in a 2U system.
- Supports up to 40x 2.5-inch hot-swap drive bays, by using combinations of front-accessible (up to 24 bays) and rear-accessible (8 bays).
- Supports 20x 3.5-inch drive bays for lower-cost high-capacity HDD storage. 2.5-inch and 3.5-inch drive bays can be mixed if desired.
- Supports 16x NVMe drives without oversubscription of PCIe lanes (1:1 connectivity) or up to 32 NVMe drives with a 1:2 oversubscription. The use of NVMe drives maximizes drive I/O performance, in terms of throughput, bandwidth, and latency.
- Supports up to two externally accessible 7mm hot-swap drives with RAID functionality for operating system boot functions
- Supports M.2 drives for convenient operating system boot functions. Available M.2 adapters support either one M.2 drive or two M.2 drives in a RAID 1 configuration for performance and reliability.
- The server has a dedicated industry-standard OCP 3.0 small form factor (SFF) slot, with a PCIe 5.0 x16 interface, supporting a variety of Ethernet network adapters. 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.
- The server offers PCI Express 4.0 I/O expansion capabilities that doubles the theoretical maximum bandwidth of PCIe 3.0 (16GT/s in each direction for PCIe 4.0, compared to 8 GT/s with PCIe 3.0). A PCIe 4.0 x16 slot provides 64 GB/s bandwidth, enough to support a 200GbE network connection.
- Up to eight PCIe 5.0 slots, all with rear access, plus an internal bay for a cabled HBA, plus a slot dedicated to the OCP adapter.

Availability and serviceability

The VX655 V3 provide many features to simplify serviceability and increase system uptime:

- The server uses ECC memory and supports memory RAS features including Single Device Data Correction (SDDC, also known as Chipkill), Patrol/Demand Scrubbing, Bounded Fault, DRAM Address Command Parity with Replay, DRAM Uncorrected ECC Error Retry, On-die ECC, ECC Error Check and Scrub (ECS), and Post Package Repair.
- The server offers hot-swap drives for greater system uptime.
- The server has up to two hot-swap redundant power supplies and up to six hot-swap redundant fans to provide availability for business-critical applications.
- Optional front-accessible slots and drives so that most major components and cables (except power) are located at the front of the server.
- 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.

- Solid-state drives (SSDs) offer more reliability than traditional mechanical HDDs for greater uptime.
- Proactive Platform Alerts (including PFA and SMART alerts): Processors, voltage regulators, memory, internal storage (SAS/SATA HDDs and SSDs, NVMe SSDs, M.2 storage, 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.
- The built-in XClarity Controller 2 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 diagnostics and can save service data to a USB key drive or remote CIFS share folder for troubleshooting and reduce service time.
- Auto restart in the event of a momentary loss of AC power (based on power policy setting in the XClarity Controller service processor)
- Offers a diagnostics port on the front of the server to allow you to attach an external diagnostics handset for enhanced systems management capabilities.
- 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

Systems management features simplify local and remote management of the VX655 V3:

- The server includes an XClarity Controller 2 (XCC2) to monitor server availability. Optional upgrade to XCC Platinum to provide remote control (keyboard video mouse) functions, support for the mounting of remote media files, FIPS 140-3 security, enhanced NIST 800-193 support, boot capture, power capping, and other management and security features.
- 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.
- An integrated industry-standard Unified Extensible Firmware Interface (UEFI) enables improved setup, configuration, and updates, and simplifies error handling.
- Support for industry standard management protocols, IPMI 2.0, SNMP 3.0, Redfish REST API, serial console via IPMI
- An integrated hardware Trusted Platform Module (TPM) supporting TPM 2.0 enables advanced cryptographic functionality, such as digital signatures and remote attestation.
- Administrator and power-on passwords help protect from unauthorized access to the server.
- Supports AMD Secure Root-of-Trust, Secure Run and Secure Move features to minimize potential attacks and protect data as the OS is booted, as applications are run and as applications are migrated from server to server.
- Supports Secure Boot to ensure only a digitally signed operating system can be used.
- Industry-standard Advanced Encryption Standard (AES) NI support for faster, stronger encryption.

- Additional physical security features are a chassis intrusion switch and a lockable front bezel.

Energy efficiency

The VX655 V3 offer the following energy-efficiency features to save energy, reduce operational costs, and increase energy availability:

- Energy-efficient planar components help lower operational costs.
- Carbon offset is available at click of button. You can project the carbon emissions per device for an average lifecycle (up to 5 years). That information is available **here**
- High-efficiency power supplies with 80 PLUS Platinum and Titanium certifications
- Low-voltage 1.1 V DDR5 memory offers energy savings compared to 1.2 V DDR4 DIMMs, an approximately 20% decrease in power consumption
- Solid-state drives (SSDs) consume as much as 80% less power than traditional spinning 2.5-inch HDDs.
- The server uses hexagonal ventilation holes, which can be grouped more densely than round holes, providing more efficient airflow through the system and thus keeping your system cooler.
- Optional Lenovo XClarity Energy Manager provides advanced data center power notification and analysis to help achieve lower heat output and reduced cooling needs.

Components and connectors

The ThinkAgile VX655 V3 Certified Node are based on the ThinkSystem SR655 V3 server.

The following figure shows the front of the VX655 V3 with 2.5-inch drives.

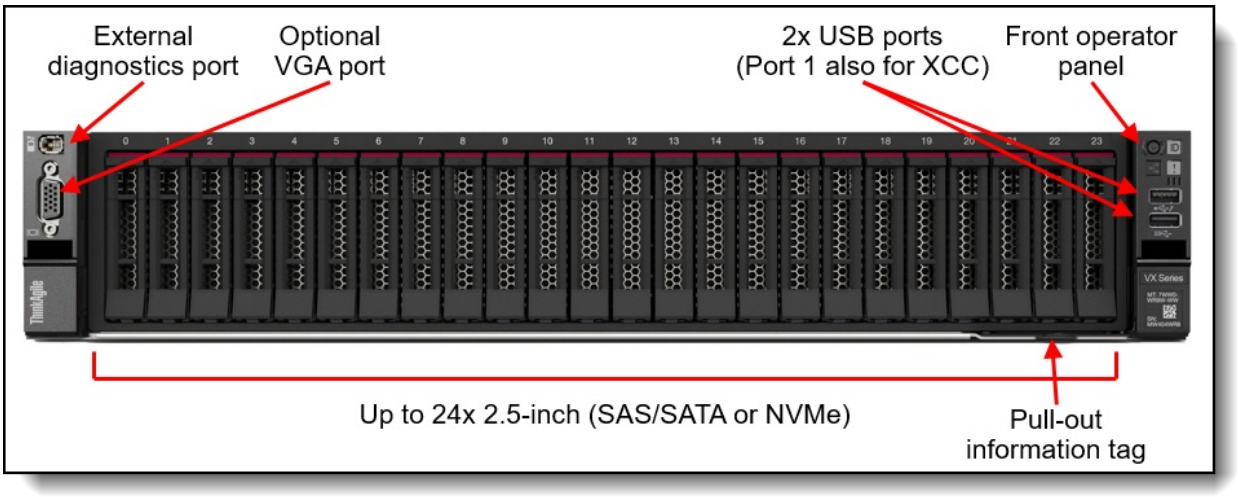

Figure 2. Front view of the ThinkAgile VX655 V3 with 2.5-inch drives

The following figure shows the front of the VX655 V3 with 3.5-inch drives.

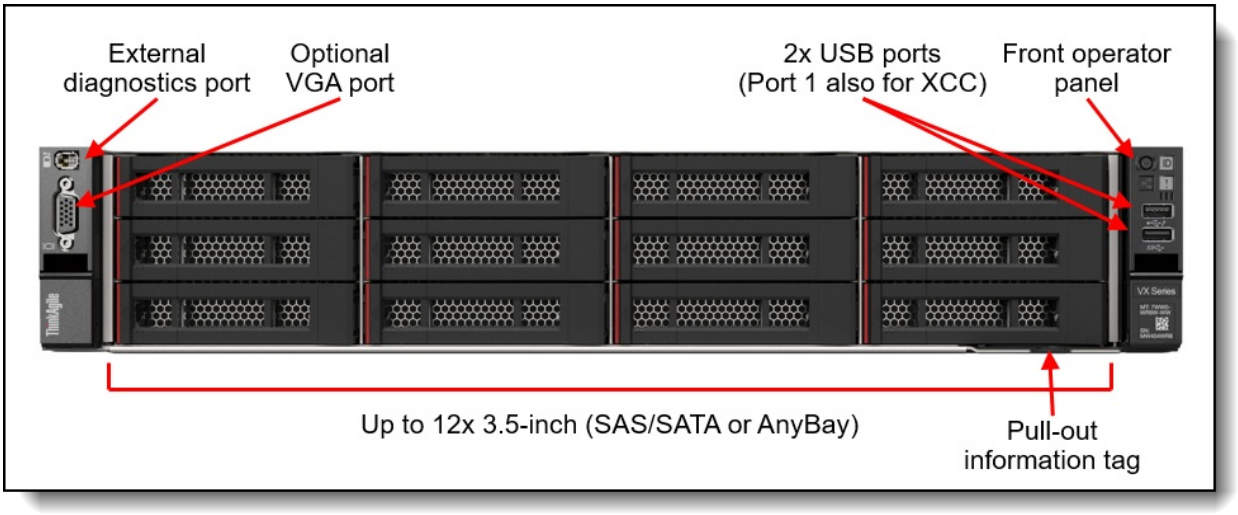

Figure 3. Front view of the ThinkAgile VX655 V3 with 3.5-inch drives

The following figure shows the components visible from the rear of the VX systems. The figure shows one configuration, with eight PCIe slots, however there are additional rear configurations which include 3.5-inch drive bays, 2.5-inch drive bays, or 7mm drive bays.

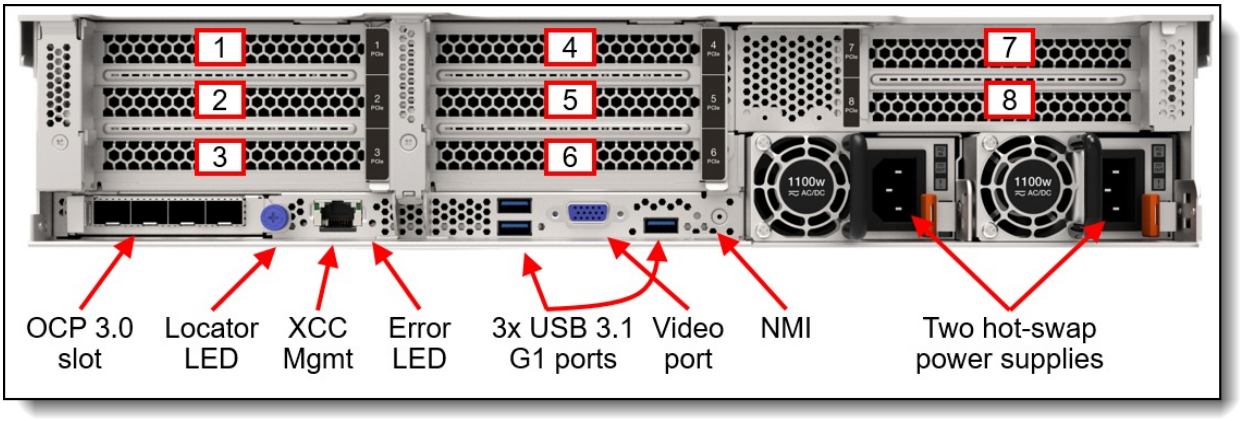

Figure 4. Rear view of the VX655 V3 (configuration with eight PCIe slots)

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

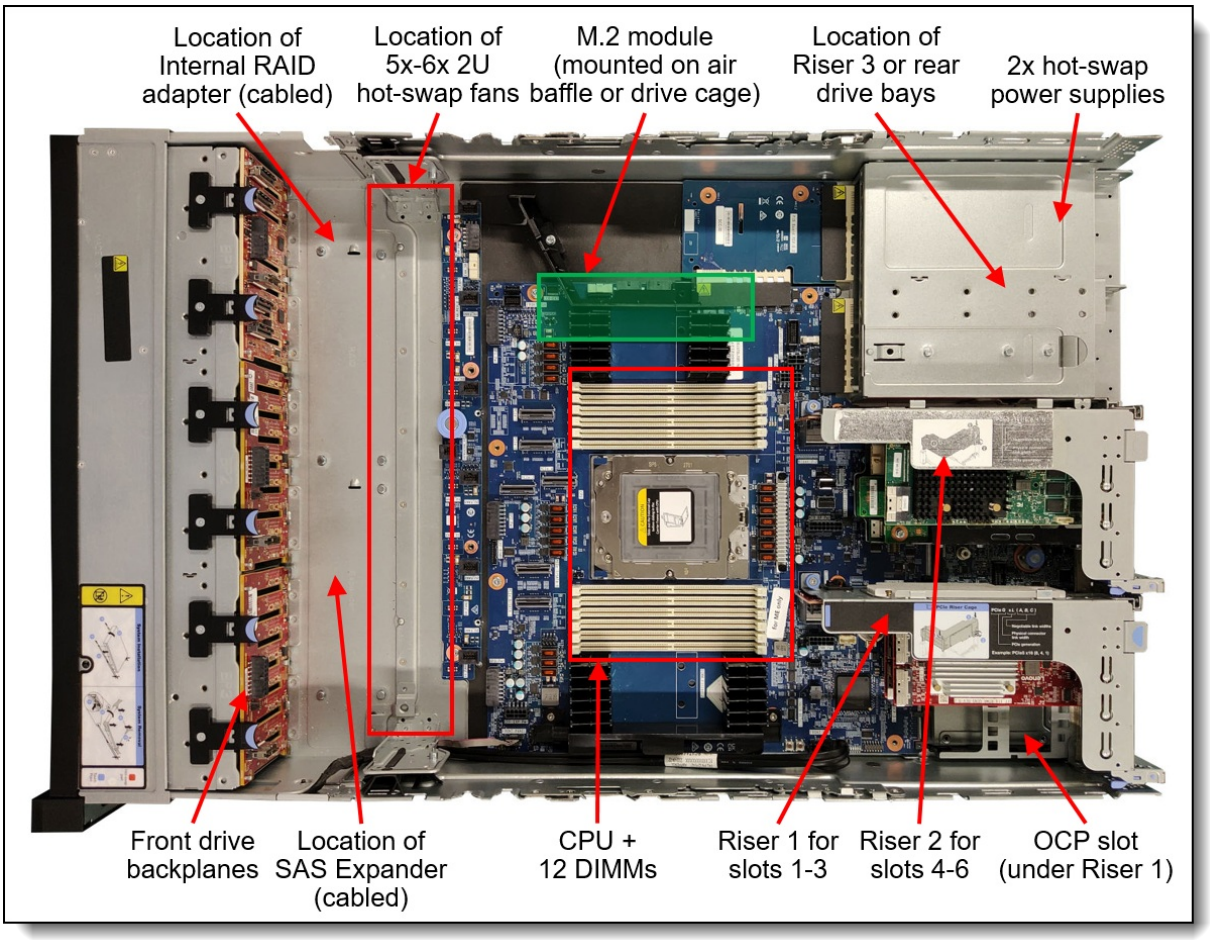

Figure 5. Internal view of the VX655 V3

Standard specifications

The ThinkAgile VX655 V3 Certified Node are based on the ThinkSystem SR655 V3 server.

The following table provides an overview of the the VX systems.

Table 1. Overview of features

	VX655 V3 CN
VX offering type	Certified Node
Base model	7D9WCTO2WW
Form factor	2U
Base platform	SR655 V3
CPU	1x EPYC 9004
Memory	12x DDR5 4800MHz (1.5TB maximum)
Drive bays	40x 2.5-inch SAS/SATA 16x 3.5-inch SAS/SATA 32x 2.5-inch NVMe
Drive Configuration	All Flash or Hybrid
Disk groups	Up to 5 groups
HBA	4350-8i 4350-16i 440-8i 440-16i
Boot drives	2x 7mm hot-swap SATA 2x 7mm hot-swap NVMe 2x M.2 SATA
OCP networking	1x OCP 3.0 adapter 2/4port 10G/10GBASE-T, 25Gb,100Gb
PCIe networking	Up to 10x adapters 10GBASE-T, 10G, 25G, 100G
GPUs	Supports up to: 8x single-wide GPUs or 3x double-wide GPUs
Hypervisor	ESXi 7.0 U3 ESXi 8.0

The following table lists the standard specifications.

Table 2. Standard specifications

Components	**Specification**
Machine types	7D9W - 3 year warranty
Form factor	2U rack.

Components	Specification
Processor	One AMD EPYC 9004 Series processors (codenamed "Genoa"). Supports processors up to 96 cores, core speeds of up to 3.6 GHz, and TDP ratings of up to 360W. Supports PCIe 5.0 for high performance I/O.
Chipset	Not applicable (platform controller hub functions are integrated into the processor)
Memory	12 DIMM slots. Each processor has 12 memory channels, with 1 DIMM per channel (DPC). Lenovo TruDDR5 RDIMMs, 3DS RDIMMs, and 9x4 RDIMMs are supported, up to 4800 MHz
Memory maximum	Up to 1.5TB with 12x 128GB 3DS RDIMM-A
Persistent memory	Not supported.
Memory protection	ECC, SDDC, Patrol/Demand Scrubbing, Bounded Fault, DRAM Address Command Parity with Replay, DRAM Uncorrected ECC Error Retry, On-die ECC, ECC Error Check and Scrub (ECS), Post Package Repair
Disk drive bays	Up to 16x 3.5-inch or 40x 2.5-inch hot-swap drive bays: • Front bays can be 3.5-inch (8 or 12 bays) or 2.5-inch (8, 16 or 24 bays) • Middle bays can be 3.5-inch (4 bays) or 2.5-inch (8 bays) • Rear bays can be 3.5-inch (2 or 4 bays) or 2.5-inch (4 or 8 bays) • Combinations of SAS/SATA, NVMe, or AnyBay (supporting SAS, SATA or NVMe) are available The systems also support these drives for OS boot: • Two 7mm drives at the rear of the server (in addition to any 2.5-inch or 3.5-inch drive bays) • Internal M.2 module supporting up to two M.2 drives See Supported drive bay combinations for details.

Storage controller	• Onboard NVMe (no RAID)
	• NVMe Retimer Adapter (PCIe 4.0 or PCIe 5.0)
	• 12 Gb SAS/SATA HBA (non-RAID)
	  ◦ 8-port and 16-port
	  ◦ PCIe 4.0 or PCIe 3.0 host interface

Network interfaces	Dedicated OCP 3.0 SFF slot with PCIe 5.0 x16 host interface, either at the rear of the server (rear-accessible) or the front of the server (front-accessible). Supports a variety of 2-port and 4-port adapters with 1GbE, 10GbE, 25GbE and 100 GbE network connectivity. One port can optionally be shared with the XClarity Controller 2 (XCC2) management processor for Wake-on-LAN and NC-SI support. Additional PCIe network adapters supported in PCIe slots.
PCI Expansion slots	Up to 8x PCIe slots with rear access, plus a slot dedicated to the OCP adapter. Slot are either PCIe 5.0 or 4.0 depending on riser selection and rear drive bay selection. Slots are configured using three riser cards. Riser 1 (slots 1-3) and Riser 2 (slots 4-6) are installed in slots in the system board, Riser 3 (slots 7-8) is cabled to ports on the system board. A variety of riser cards are available. See thel/O expansion for details. For 2.5-inch front drive configurations, the server supports the installation of a HBA in a dedicated area that does not consume any of the PCIe slots. • 1x OCP slot • 2x PCIe x16 full-height half-length slots

Components	Specification
Ports	Front: 1x USB 3.1 G1 (5 Gb/s) port, 1x USB 2.0 port (also for XCC local management), External diagnostics port, optional VGA port. Rear: 3x USB 3.1 G1 (5 Gb/s) ports, 1x VGA video port, 1x RJ-45 1GbE systems management port for XCC remote management. Optional 2nd XCC remote management port (installs in OCP slot). Optional DB-9 COM serial port (installs in slot 3). Internal: 1x USB 3.1 G1 (5 Gb/s) connector for operating system or license key purposes.
Cooling	Up to 6x N+1 redundant hot swap 60 mm fans, configuration dependent. One fan integrated in each power supply.
Power supply	Up to two hot-swap redundant AC power supplies, 80 PLUS Platinum or 80 PLUS Titanium certification. 750 W, 1100 W, 1800 W, 2400 W, and 2600 W AC, supporting 220 V AC. 750 W and 1100 W options also support 110V input supply. In China only, all power supply options support 240 V DC. Also available is a 1100W power supply with a -48V DC input.
Video	G200 graphics with 16 MB memory with 2D hardware accelerator, integrated into the XClarity Controller. Maximum resolution is 1920x1200 32bpp at 60Hz.
Hot-swap parts	Drives, 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. Optional 2nd redundant XCC2 remote port supported, installs in the OCP slot. XClarity Administrator for centralized infrastructure management, XClarity Integrator plugins for VMware Lifecycle Manager, and XClarity Energy Manager centralized server power management. Optional XCC Platinum to enable remote control functions and other features.
Security features	Chassis intrusion switch, Power-on password, administrator's password, Root of Trust module supporting TPM 2.0 and Platform Firmware Resiliency (PFR). Optional lockable front security bezel.
Software	Software licenses that can be purchased from Lenovo or provided by the customer: • 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 7.0 U3 (factory install), ESXi 8.0 (Future Support) See the Operating system support section for specifics.
Limited warranty	Three-year 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.
Software maintenance	One-, three-, or five-year software support and subscription is included with the VMware software licenses available from Lenovo (optional).
Dimensions	Width: 445 mm (17.5 in.), height: 87 mm (3.4 in.), depth: 764 mm (30.1 in.). See Physical and electrical specifications for details.
Weight	Maximum: 38.8 kg (85.5 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 you 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 VX655 V3 Certified Node	7D9WCTO2WW	7D9WCTOBWW

Models of the VX systems are defined based on whether the systems have 2.5-inch drive bays at the front (called the 2.5-inch chassis) or whether they have 3.5-inch drive bays at the front (called the 3.5-inch chassis). For models, the feature codes for these chassis bases are as listed in the following table.

Table 4. Chassis base feature codes

Feature	Description	Maximum supported
		VX655 V3 CN
BRY9	ThinkAgile VX V3 2U 24x2.5" Chassis	1
BLKK	ThinkSystem V3 2U 24x2.5" Chassis	1
BLKJ	ThinkSystem V3 2U 12x3.5" Chassis	1
BRY8	ThinkAgile VX V3 2U 12x3.5" Chassis	1

Comparison with the ThinkSystem SR655 V3

The ThinkAgile VX655 V3 Certified Node are based on the ThinkSystem SR655 V3 server, however there are key differences between the base model and the Certified Node:

- No onboard SATA controller support
- No SATA HDDs
- Fibre Channel support for data migration only
- InfiniBand adapters only support the Ethernet function
- Drives are categorized as Cache or Capacity drives and are formed as disk groups for OSA (Original Storage Architecture)and support up to 5 disk groups.

For details about the ThinkSystem SR655 V3, see the SR655 V3 product guide:
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server

To verify what specific hardware components are supported with the VX655 V3, see the DCSC configurator:
https://dcsc.lenovo.com

Processor options

The VX655 V3 systems support the following third-generation AMD EPYC processors.

For details about the ThinkSystem SR655 V3, see the SR655 V3 product guide:
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server#processor-options

Table 5. Processors

Part number	Feature	Description	Maximum supported
			VX655 V3 CN
None	BREE	ThinkSystem AMD EPYC 9124 16C 200W 3.0GHz Processor	1
None	BREJ	ThinkSystem AMD EPYC 9174F 16C 320W 4.1GHz Processor	1
None	BREH	ThinkSystem AMD EPYC 9224 24C 200W 2.5GHz Processor	1
None	BRED	ThinkSystem AMD EPYC 9254 24C 200W 2.9GHz Processor	1
None	BREF	ThinkSystem AMD EPYC 9274F 24C 320W 4.05GHz Processor	1
None	BREC	ThinkSystem AMD EPYC 9334 32C 210W 2.7GHz Processor	1
None	BR30	ThinkSystem AMD EPYC 9354 32C 280W 3.25GHz Processor	1
None	BREG	ThinkSystem AMD EPYC 9354P 32C 280W 3.25GHz Processor	1
None	BR32	ThinkSystem AMD EPYC 9374F 32C 320W 3.85GHz Processor	1
None	BREB	ThinkSystem AMD EPYC 9454 48C 290W 2.75GHz Processor	1
None	BREM	ThinkSystem AMD EPYC 9454P 48C 290W 2.75GHz Processor	1
None	BR31	ThinkSystem AMD EPYC 9474F 48C 360W 3.6GHz Processor	1
None	BREA	ThinkSystem AMD EPYC 9534 64C 280W 2.45GHz Processor	1
None	BPVJ	ThinkSystem AMD EPYC 9554 64C 360W 3.1GHz Processor	1
None	BREL	ThinkSystem AMD EPYC 9554P 64C 360W 3.1GHz Processor	1
None	BR2Z	ThinkSystem AMD EPYC 9634 84C 290W 2.25GHz Processor	1
None	BPVK	ThinkSystem AMD EPYC 9654 96C 360W 2.4GHz Processor	1
None	BREK	ThinkSystem AMD EPYC 9654P 96C 360W 2.4GHz Processor	1

Memory options

The VX655 V3 systems support the following memory options.

For details about the ThinkSystem SR655 V3, see the SR655 V3 product guide:
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server#memory-options

Table 6. Memory

Part number	Feature	Description	Maximum supported
			VX655 V3 CN
4X77A81437	BQ3C	ThinkSystem 16GB TruDDR5 4800MHz (1Rx8) RDIMM-A	12
4X77A81438	BQ39	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 10x4 RDIMM-A	12
4X77A81439	BQ3E	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 9x4 RDIMM-A	12
4X77A81440	BQ37	ThinkSystem 32GB TruDDR5 4800MHz (2Rx8) RDIMM-A	12
4X77A81441	BQ3D	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 10x4 RDIMM-A	12
4X77A81442	BQ36	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 9x4 RDIMM-A	12
4X77A81448	BUVV	ThinkSystem 96GB TruDDR5 4800MHz (2Rx4) 10x4 RDIMM-A	12
4X77A81443	BQ3A	ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM-A v2	12
CTO Only	BYEE	ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM-A v1	12

Internal storage

Internal storage configurations of the VX655 V3 are as follows. All drives are hot-swap and are accessible from the front or rear of the system, or from the internals of the server with the cover removed (where mid drives are supported)

- VX655 V3 Certified Node:
  - Front drive bays:
    - Up to 24x 2.5-inch SAS/SATA or NVMe or 8x 2.5-inch Anybay
    - Up to 12x 3.5-inch SAS/SATA or Anybay
  - Mid drive bays:
    - Up to 8x 2.5-inch SAS/SATA or NVMe
    - Up to 4x 3.5-inch SAS/SATA
  - Rear drive bays:
    - Up to 8x 2.5-inch SAS/SATA
    - Up to 4x 2.5-inch Anybay
    - Up to 4x 3.5-inch SAS/SATA
    - Up to 2x (7mm) SATA/NVME

Specific choices of drive backplane are listed in the table below.

For details about these options, including configuration rules, see the SR655 V3 product guide:
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server#internal-storage

Table 7. Drive backplanes

Part number	Feature	Description	Maximum supported VX655 V3 CN
Front 3.5-inch drive backplanes			
None	B8LP	ThinkSystem 2U 8x3.5" SAS/SATA Backplane	1
None	B8LT	ThinkSystem 2U 12x3.5" SAS/SATA Backplane	1
None	BPL8	ThinkSystem 2U 8x3.5" SAS/SATA+4 AnyBay Backplane	1
None	BPL9	ThinkSystem 2U 8x3.5" SAS/SATA+4 NVMe Backplane	1
None	BH8C	ThinkSystem 2U 12x3.5" AnyBay Backplane	1
Front 2.5-inch drive backplanes			
None	B8LU	ThinkSystem 2U 8x2.5" SAS/SATA Backplane	3
None	BH8D	ThinkSystem 2U/4U 8x2.5" NVMe Backplane	3
None	BPL7	ThinkSystem 2U 6x2.5" SAS/SATA+2 AnyBay Backplane	1
None	BH8B	ThinkSystem 2U/4U 8x2.5" AnyBay Backplane	3
None	BQQD	ThinkSystem 2U 2.5" 6 SAS/SATA+2 NVMe Backplane	1
None	BSE3	ThinkSystem 4x2.5" AnyBay Gen5 Backplane	1
None	BS7Z	ThinkSystem 2U 6x2.5" SAS/SATA+2 AnyBay Gen5 Backplane	1
None	BS80	ThinkSystem 2U 6x2.5" SAS/SATA+2 NVMe Gen5 Backplane	1
None	BLL2	ThinkSystem 2U 8x2.5" Gen5 AnyBay Backplane	1
None	BS7Y	ThinkSystem 2U 8x2.5" Gen5 NVMe Backplane	3
Integrated Diagnostics Panel (for 2.5-inch configurations with 8 or 16 bays only)			
None	BMJA	ThinkSystem 2U 16x2.5" Front Operator Panel v2	1
Mid - 3.5-inch drive backplane			
None	BCQK	ThinkSystem 2U 4x3.5" SAS/SATA Middle Backplane	1
Mid - 2.5-inch drive backplane			
None	BCQL	ThinkSystem 2U 4x2.5" SAS/SATA Middle Backplane	2
None	BDY7	ThinkSystem 2U 4x2.5" Middle NVMe Backplane	2
None	BS81	ThinkSystem 2U 4x2.5" Middle NVMe Gen5 Backplane	2
Rear - 3.5-inch drive backplanes			
None	BAG7	ThinkSystem 2U 2x3.5" SAS/SATA Rear Backplane	1
None	BQ2S	ThinkSystem 2U 12x3.5" SAS/SATA with Rear 4-Bay Expander Backplane	1
Rear - 2.5-inch drive backplanes			
None	B97X	ThinkSystem 2U 8x2.5" SAS/SATA Rear Backplane	1

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

Table 8. Boot drive enablement

Part number	Feature	Description	Maximum supported VX655 V3 CN
M.2 enablement kits			
4Y37A09750	B8P9	ThinkSystem M.2 NVMe 2-Bay RAID Adapter	1
4Y37A90063	BYFF	ThinkSystem M.2 RAID B540i-2i SATA/NVMe Adapter	1
4Y37A79663	BM8X	ThinkSystem M.2 SATA/x4 NVMe 2-Bay Adapter	1
7MM enablement kits			
4Y37A90062	BYFG	ThinkSystem 7mm SATA/NVMe 2-Bay Rear Hot-Swap RAID Enablement Kit	1
None	BU0N	ThinkSystem 7mm SATA/NVMe 2-Bay Rear Enablement Kit v2	1
None	B8P3	ThinkSystem 2U 7mm Drive Kit w/ NVMe RAID	1
RAID adapters M.2/7MM - Boot Only			
None	BT7N	ThinkSystem Raid 5350-8i for M.2/7MM SATA boot Enablement	1
None	BT7P	ThinkSystem Raid 540-8i for M.2/7MM NVMe boot Enablement	1

For details about these options, including configuration rules, see the SR655 V3 product guide:
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server#internal-storage

Configuration notes:

- If RAID support is not required, the M.2 adapter connects to an onboard port. No additional adapter is required
- The support of RAID-1 with the M.2 drives requires an additional RAID adapter that is installed in PCIe slot 2 or slot 3:
  - RAID support for 7MM/M.2 SATA drives requires a RAID 5350-8i adapter (feature BT7N) for Boot only
  - RAID support for 7MM/M.2 NVMe or SATA drives requires a RAID 540-8i adapter (feature BT7P) for Boot Only
- The RAID adapter used for M.2 drive support cannot be configured for use with other drive bays for VSAN data

Disk Groups

The following table lists the supported Disk Groups for each VX system.

Table 9. Disk Groups

Drive Selection Rules	**VX655 V3 Certified Node**
Model type	Hybrid (HY) or All Flash (AF)
Maximum number of drives	*32
Number of Disk Groups	1 - 5
Number of Cache Drives per Disk Group	1
Number of Capacity Drives per Disk Group	2 - 7
Allowed Capacity Drive Quantities	
1 Disk Group (1 Cache Drive)	2, 3, 4, 5, 6 or 7
2 Disk Groups (2 Cache Drives)	4, 6, 8, 10, 12 or 14
3 Disk Groups (3 Cache Drives)	6, 9, 12, 15, 18 or 21
4 Disk Groups (4 Cache Drives)	8, 12, 16, 20, 24 or 28
5 Disk Groups (5 Cache Drives)	10, 15, 20, 25,30, or 35

*40 drives support available via CORE

Controllers for internal storage

The VX655 V3 systems support the following storage controller options.

For details about these components, including configuration rules, see the SR655 V3 product guide: https://lenovopress.com/lp1610-thinksystem-sr655-v3-server#controllers-for-internal-storage

Table 10. Controllers for internal storage

Part number	**Feature**	**Description**	**Maximum supported** **VX655 V3 CN**
SAS/SATA HBA - PCIe 3.0 adapters			
4Y37A78601	BJHJ	ThinkSystem 4350-16i SAS/SATA 12Gb HBA	2
4Y37A78602	BJHH	ThinkSystem 4350-8i SAS/SATA 12Gb HBA	4
SAS/SATA HBA - PCIe 4.0 adapters			
4Y37A78602	BM50	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA	2
4Y37A78601	BM51	ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA	4
4Y37A09725	B8P1	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb Internal HBA	1
NVMe adapters			
4Y37A09737	B8P5	ThinkSystem 1611-8P PCIe Gen4 Switch Adapter	*2
4C57A65446	B98C	ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter	3

* Note: The use of PCIe Switch requires an addition cert. Will approve with CORE.

Internal drive options

This section lists the supported drives:

- Boot drives
- Internal drives for VX655 V3 CN

Configuration Note:

- VMware will no longer support higher capacity 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 following table lists the supported 7mm and M.2 drives suitable for OS boot functions.

Table 11. Boot drives

Part number	Feature	Description	Maximum supported VX655 V3 CN
7mm 2.5-inch hot-swap 6 Gb SATA SSDs			
4XB7A82264	BQ1U	ThinkSystem 7mm 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD	2
4XB7A82265	BQ1V	ThinkSystem 7mm 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	2
4XB7A82266	BQ1W	ThinkSystem 7mm 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	2
4XB7A17106	BK79	ThinkSystem 7mm S4520 240GB Read Intensive SATA 6Gb HS SSD	2
4XB7A17107	BK7A	ThinkSystem 7mm S4520 480GB Read Intensive SATA 6Gb HS SSD	2
4XB7A17108	BK7B	ThinkSystem 7mm S4520 960GB Read Intensive SATA 6Gb HS SSD	2
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
4XB7A82855	BPZ5	ThinkSystem 7mm U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	2
4XB7A82856	BPZ6	ThinkSystem 7mm U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	2
M.2 SATA drives			
4XB7A82286	BQ1Z	ThinkSystem M.2 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD	2
4XB7A82287	BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	2
4XB7A82288	BQ20	ThinkSystem M.2 5400 PRO 960GB Read Intensive SATA 6Gb NHS SSD	2
4XB7A89422	BYF7	ThinkSystem M.2 ER3 240GB Read Intensive SATA 6Gb NHS SSD	2
4XB7A90049	BYF8	ThinkSystem M.2 ER3 480GB Read Intensive SATA 6Gb NHS SSD	2
4XB7A90230	BYF9	ThinkSystem M.2 ER3 960GB Read Intensive SATA 6Gb NHS SSD	2
M.2 PCIe NVMe drives			
4XB7A13999	BKSR	ThinkSystem M.2 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2
4XB7A90102	BXMH	ThinkSystem M.2 PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2

Internal drives for VX655 V3 CN

The following table lists the drives support in the VX655 V3 CN. For both All Flash Storage and Hybrid Storage configurations, drives are classified as either Cache drives, Capacity drives, or both.

Configuration Note:

- Maximum drive quantities depend on Disk Group configurations.
- Drive configurations over 32 require CORE.

- VMware will no longer support higher capacity drives greater than 8TB

Table 12. Drives supported in the VX655 V3 CN

Part number	Feature	Description	All Flash	All Flash		Hybrid	
			ESA	Cache	Capacity	Cache	Capacity
2.5-inch hot-swap 12 Gb SAS HDDs							
7XB7A00027	AUM1	ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD	No	No	No	No	32
7XB7A00028	AUM2	ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD	No	No	No	No	32
4XB7A83970	BRG7	ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD v2	No	No	No	No	32
7XB7A00021	AULV	ThinkSystem 2.5" 300GB 15K SAS 12Gb Hot Swap 512n HDD	No	No	No	No	32
2.5-inch hot-swap 24 Gb SAS SSDs							
4XB7A80318	BNWC	ThinkSystem 2.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD	No	No	32	No	No
4XB7A80319	BNWE	ThinkSystem 2.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD	No	No	32	No	No
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	No	32	No	No
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	No	32	No	No
4XB7A80322	BP3J	ThinkSystem 2.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD	No	No	32	No	No
4XB7A80323	BP3D	ThinkSystem 2.5" PM1653 30.72TB Read Intensive SAS 24Gb HS SSD	No	No	32	No	No
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	No	32	32	32	No
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	No	32	32	32	No
4XB7A80342	BNW6	ThinkSystem 2.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD	No	32	32	32	No
4XB7A80343	BP3K	ThinkSystem 2.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD	No	32	32	32	No
2.5-inch hot-swap 6 Gb SATA SSDs							
4XB7A82289	BQ21	ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No
4XB7A82290	BQ24	ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No
4XB7A82291	BQ22	ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No
4XB7A82292	BQ23	ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No

Part number	Feature	Description	All Flash	All Flash		Hybrid	
			ESA	Cache	Capacity	Cache	Capacity
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	No	32	32	32	No
4XB7A82258	BQ1Q	ThinkSystem 2.5" 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A82259	BQ1P	ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A82260	BQ1R	ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A82261	BQ1X	ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A82262	BQ1S	ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A82263	BQ1T	ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A72442	BM87	ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A17072	B99D	ThinkSystem 2.5" S4520 240GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	32	No	No
2.5-inch hot-swap PCIe 4.0 NVMe SSDs							
4XB7A17158	BKKY	ThinkSystem 2.5" U.2 P5800X 400GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	32	32	No	No

Part number	Feature	Description	All Flash	All Flash		Hybrid	
			ESA	Cache	Capacity	Cache	Capacity
4XB7A17159	BKKZ	ThinkSystem 2.5" U.2 P5800X 800GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	32	32	No	No
4XB7A17160	BMM8	ThinkSystem 2.5" U.2 P5800X 1.6TB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	32	32	No	No
4XB7A79639	BNF1	ThinkSystem 2.5" U.3 7450 MAX 800GB Mixed Use NVMe PCIe 4.0 x4 HS SSD	No	32	32	No	No
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	No	32	32	No	No
4XB7A13970	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	32	32	32	No	No
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	32	32	32	No	No
4XB7A79646	BNF3	ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	No	32	No	No
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	No	32	No	No
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	32	No	32	No	No
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	32	No	32	No	No
3.5-inch hot-swap 12 Gb SAS HDDs							
7XB7A00042	AUU5	ThinkSystem 3.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	No	20
7XB7A00043	AUU6	ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	No	20
7XB7A00044	AUU7	ThinkSystem 3.5" 6TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	No	No	No	20
7XB7A00045	B0YR	ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	No	No	No	20
3.5-inch hot-swap 24 Gb SAS SSDs							
4XB7A80324	BNWD	ThinkSystem 3.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD	No	No	20	No	No
4XB7A80325	BNWG	ThinkSystem 3.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD	No	No	20	No	No
4XB7A80326	BNWH	ThinkSystem 3.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	No	20	No	No
4XB7A80327	BP3F	ThinkSystem 3.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	No	20	No	No
4XB7A80328	BP3H	ThinkSystem 3.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD	No	No	20	No	No

Part number	Feature	Description	All Flash	All Flash		Hybrid	
			ESA	Cache	Capacity	Cache	Capacity
4XB7A80345	BNWA	ThinkSystem 3.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	No	20	20	20	No
4XB7A80346	BNWB	ThinkSystem 3.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD	No	20	20	20	No
4XB7A80347	BP3G	ThinkSystem 3.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD	No	20	20	20	No
3.5-inch hot-swap 6 Gb SAS SSDs							
4XB7A17118	BA7K	ThinkSystem 3.5" S4520 240GB Read Intensive SATA 6Gb HS SSD	No	No	20	No	20
4XB7A17119	BA7L	ThinkSystem 3.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	No	20	No	20
4XB7A17120	BA7M	ThinkSystem 3.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	No	20	No	20
4XB7A17121	BA7N	ThinkSystem 3.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	No	20	No	20
4XB7A17122	BK7F	ThinkSystem 3.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	No	20	No	20
4XB7A17123	BK7G	ThinkSystem 3.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	No	20	No	20
4XB7A17137	BA4W	ThinkSystem 3.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	No	20	20	20	No
4XB7A17138	BA4X	ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	20	20	20	No
4XB7A17139	BA4Y	ThinkSystem 3.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	No	20	20	20	No
4XB7A17140	BK7P	ThinkSystem 3.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	No	20	20	20	No
3.5-inch hot-swap PCIe 4.0 NVMe SSDs							
4XB7A17161	BMM7	ThinkSystem 3.5" U.2 P5800X 400GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	12	12	No	No
4XB7A17162	BMM5	ThinkSystem 3.5" U.2 P5800X 800GB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	12	12	No	No
4XB7A77070	BMM6	ThinkSystem 3.5" U.2 P5800X 1.6TB Write Intensive NVMe PCIe 4.0 x4 HS SSD	No	12	12	No	No

Note: VX servers utilize generic drives and Firmware. VCG support will be listed under the drive vendor instead of Lenovo. Please check Lenovo Press for the Drive family to obtain Supplier PN if checking the VCG for compliance

Network adapters

The VX655 V3 systems support the following networking options.

For details about these options, including configuration rules, see the SR655 V3 product guide:
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server##i-o-expansion
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server#network-adapters

Table 13. OCP networking options

Part number	Feature	Description	Maximum supported VX655 V3 CN
Gigabit Ethernet			
4XC7A08235	B5T1	ThinkSystem Broadcom 5719 1GbE RJ45 4-port OCP Ethernet Adapter	1
4XC7A08277	B93E	ThinkSystem Intel I350 1GbE RJ45 4-port OCP Ethernet Adapter	1
10 GbE			
4XC7A08236	B5ST	ThinkSystem Broadcom 57416 10GBASE-T 2-port OCP Ethernet Adapter	1
4XC7A08240	B5T4	ThinkSystem Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter	1
4XC7A08278	BCD5	ThinkSystem Intel X710-T2L 10GBASE-T 2-port OCP Ethernet Adapter	1
4XC7A80268	BPPY	ThinkSystem Intel X710-T4L 10GBase-T 4-Port OCP Ethernet Adapter	1
25 GbE			
4XC7A08294	BCD4	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1
4XC7A80269	BP8L	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port OCP Ethernet Adapter	1
4XC7A08237	BN2T	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1
4XC7A80567	BPPW	ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port OCP Ethernet Adapter	1
4XC7A62582	BE4T	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1
100 GbE			
4XC7A08243	BPPX	ThinkSystem Broadcom 57508 100GbE QSFP56 2-Port OCP Ethernet Adapter	1

Table 14. PCIe networking options

Part number	Feature	Description	Maximum supported VX655 V3 CN
Gigabit Ethernet			
7ZT7A00484	AUZV	ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter	10
7ZT7A00535	AUZW	ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter	10
10 GbE			
4XC7A08236	BNWL	ThinkSystem Intel X710-T2L 10GBase-T 2-Port PCIe Ethernet Adapter	10
4XC7A79699	BMXB	ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter	10
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	10

Part number	Feature	Description	Maximum supported VX655 V3 CN
4XC7A08245	B5SU	ThinkSystem Broadcom 57454 10GBASE-T 4-port PCIe Ethernet Adapter	10
25 GbE			
4XC7A08295	BCD6	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	10
4XC7A80267	BP8M	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	6
4XC7A08238	BK1H	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter	10
4XC7A80566	BNWM	ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	6
4XC7A62580	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	10
100 GbE			
4XC7A08297	BK1J	ThinkSystem Broadcom 57508 100GbE QSFP56 2-port PCIe 4 Ethernet Adapter	6
4XC7A08248	B8PP	ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter	6
4C57A14177	B4R9	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 1-port PCIe VPI Adapter	6
4C57A14178	B4RA	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 2-port PCIe VPI Adapter	6
200 Gb Ethernet			
4C57A15326	B4RC	ThinkSystem Mellanox ConnectX-6 HDR/200GbE QSFP56 1-port PCIe 4 VPI Adapter	6
Gigabit Ethernet			
7ZT7A00484	AUZV	ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter	10
7ZT7A00535	AUZW	ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter	10
10 GbE			
4XC7A08236	BNWL	ThinkSystem Intel X710-T2L 10GBase-T 2-Port PCIe Ethernet Adapter	10
4XC7A79699	BMXB	ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter	10
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	10
4XC7A08245	B5SU	ThinkSystem Broadcom 57454 10GBASE-T 4-port PCIe Ethernet Adapter	10
25 GbE			
4XC7A08295	BCD6	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	10
4XC7A80267	BP8M	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	6
4XC7A08238	BK1H	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter	10
4XC7A80566	BNWM	ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	6

Part number	Feature	Description	Maximum supported VX655 V3 CN
4XC7A62580	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	10
100 GbE			
4XC7A08297	BK1J	ThinkSystem Broadcom 57508 100GbE QSFP56 2-port PCIe 4 Ethernet Adapter	6
4XC7A08248	B8PP	ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter	6
4C57A14177	B4R9	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 1-port PCIe VPI Adapter	6
4C57A14178	B4RA	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 2-port PCIe VPI Adapter	6
200 Gb Ethernet			
4C57A15326	B4RC	ThinkSystem Mellanox ConnectX-6 HDR/200GbE QSFP56 1-port PCIe 4 VPI Adapter	6

GPU adapters

The VX655 V3 systems support the following GPU options.

For details about these options, including configuration rules, see the SR655 V3 product guide: https://lenovopress.com/lp1610-thinksystem-sr655-v3-server#gpu-adapters

Table 15. GPU options

Part number	Feature	Description	Maximum supported VX655 V3 CN
Double-wide GPUs			
4X67A76720	BMT9	ThinkSystem NVIDIA RTX A2000 12GB PCIe Active GPU	3
4X67A76726	BNFD	ThinkSystem NVIDIA RTX A4500 20GB PCIe Active GPU	3
4X67A76581	BJHG	ThinkSystem NVIDIA A30 24GB PCIe Gen4 Passive GPU	3
4X67A71310	BFT0	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	3
4X67A76715	BLK1	ThinkSystem NVIDIA A100 80GB PCIe Gen4 Passive GPU	3
CTO Only	BQZR	ThinkSystem NVIDIA A30 24GB PCIe Gen4 Passive GPU w/o CEC	3
4X67A72593	BEL4	ThinkSystem NVIDIA A40 48GB PCIe Gen4 Passive GPU	3
4X67A72593	BQZQ	ThinkSystem NVIDIA A40 48GB PCIe Gen4 Passive GPU w/o CEC	3
4X67A76727	BNFE	ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU	3
4X67A76727	BQZU	ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU w/o CEC	3
CTO Only	BQZP	ThinkSystem NVIDIA A100 80GB PCIe Gen4 Passive GPU w/o CEC	3
Single-wide GPUs			
CTO Only	BQZT	ThinkSystem NVIDIA A2 16GB PCIe Gen4 Passive GPU w/o CEC	8
4X67A81547	BP05	ThinkSystem NVIDIA A2 16GB PCIe Gen4 Passive GPU	8

Fibre Channel host bus adapter

Table 16. Fibre Channel host bus adapter

Part number	Feature	Description	Maximum supported VX655 V3 CN
64 Gb Fibre Channel HBAs			
4XC7A77485	BLC1	ThinkSystem Emulex LPe36002 64Gb 2-port PCIe Fibre Channel Adapter	10
32 Gb Fibre Channel HBAs			
4XC7A76498	BJ3G	ThinkSystem Emulex LPe35000 32Gb 1-port PCIe Fibre Channel Adapter v2	10
4XC7A76525	BJ3H	ThinkSystem Emulex LPe35002 32Gb 2-port PCIe Fibre Channel Adapter V2	10
4XC7A08279	BA1G	ThinkSystem QLogic QLE2770 32Gb 1-Port PCIe Fibre Channel Adapter	10
4XC7A08276	BA1F	ThinkSystem QLogic QLE2772 32Gb 2-Port PCIe Fibre Channel Adapter	10
16 Gb Fibre Channel HBAs			
01CV840	ATZV	Emulex 16Gb Gen6 FC Dual-port HBA	10
01CV830	ATZU	Emulex 16Gb Gen6 FC Single-port HBA	10
01CV760	ATZC	QLogic 16Gb Enhanced Gen5 FC Dual-port HBA	10
01CV750	ATZB	QLogic 16Gb Enhanced Gen5 FC Single-port HBA	10

Operating system support

The ThinkAgile VX655 V3 IS supports the following operating systems:

Server: ThinkAgile VX655 V3 IS (7D9W, EPYC 9004)

- VMware ESXi 7.0 U3
- VMware ESXi 8

The ThinkAgile VX655 V3 CN supports the following operating systems:

Server: ThinkAgile VX655 V3 CN (7D9W, EPYC 9004)

- VMware ESXi 7.0 U3
- VMware ESXi 8

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.com/osig#term=vx%2520amd%25202u%25202s&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 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.

ThinkAgile VX Deployer Tool

The ThinkAgile VX Deployer tool is a web-based UI used to simplify and automate the deployment of Lenovo ThinkAgile VX systems within VMware vSAN clusters. The ThinkAgile VX Deployer tool can install and configure the following software:

VMware ESXi

VMware ESXi is a bare-metal hypervisor that the ThinkAgile VX Deployer tool installs on the hardware of each host in the cluster. ESXi translates requests between the physical and virtual resources, making virtualization possible.

VMware vCenter Server

VMware vCenter Server is a management console that provides a centralized platform for controlling VMware vSphere environments. One service that runs in VMware vCenter Server is VMware vLCM, which provides centralized and simplified management to install software, maintain that software through updates and upgrades, and decommission it.

Lenovo® XClarity Integrator

Lenovo XClarity Integrator is the hardware support manager (HSM) used by vCenter for firmware upgrades. Lenovo XClarity Integrator fully integrates with VMware vLCM to give the VMware vCenter Server software visibility into Lenovo hardware. The interface for the ThinkAgile VX Deployer tool is a straightforward web-based installation wizard with three top-level options:

- Install a new cluster (using the wizard).
- Add nodes to an existing cluster (using the wizard).
- Use a configuration file to install a new cluster or add nodes to an existing cluster.

Prowess testing included all three of these options, plus some key lifecycle-management features in VMware vCenter Server. To view the results of our testing please use the link https://www.lenovo.com/content/dam/lenovo/dcg/global/en/products/software-defined-infrastructure/Prowess_Measuring_the_Ease_of_Deployment_of_ThinkAgile_VX.pdf

Warranty and Support

The VX655 V3 have a 3-year warranty based on the machine type:

- 7D9W - 3 year warranty

The ThinkAgile VX 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 Series Integrated Systems (appliances) 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 Integrated Systems (appliances):

- 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 are available for ThinkAgile VX customers. These offerings are performed by Lenovo Professional Services.

- **Onsite Deployment**: Install, configure, and validate solution 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/

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. **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

2. **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

3. **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

4. **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

5. **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

6. **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

7. **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

8. **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

9. **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

10. **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

11. **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

12. **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

13. **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

14. **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

15. **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

16. **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

17. **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

18. **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

19. **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

20. **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

21. **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

22. **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

23. **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

24. **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

25. **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

26. **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

27. **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

28. **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

29. **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

30. **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

31. **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

32. **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

33. **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

34. **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

35. **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

36. **AI-Ready Enterprise Platform**
2021-11-05 | 17 minutes | Employees and Partners

At VMworld event, NVIDIA and VMware announced a modern DC transformation to bring the power of AI to every enterprise. We will cover how the solution, when combined with Tanzu, manages AI workloads alongside existing enterprise applications on Lenovo systems.

In this course, you will learn how the partnership between Lenovo, NVIDIA and VMware can help unlock AI for every enterprise with an end-to-end platform.

After completing this course, you will be able to:
• Describe the challenges addressed by the AI-Ready Enterprise Platform.
• List the components of the AI-Ready Enterprise Platform
• Identify the Lenovo servers that are integrated into the solution
• Explain how the partnership between Lenovo, NVIDIA and VMware can help AI customers
• Enumerate the benefits of the AI-Ready Enterprise Platform

Published: 2021-11-05
Length: 17 minutes
Employee link: Grow@Lenovo
Partner link: Lenovo Partner Learning
Course code: DAIO200

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 SR655 V3 product guide:
https://lenovopress.com/lp1610-thinksystem-sr655-v3-server

Related product families

Product families related to this document are the following:

- 2-Socket Rack Servers
- Hyperconverged Infrastructure
- Hyperconverged Infrastructure
- ThinkAgile VX Series for VMware

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This document, LP1690, was created or updated on March 26, 2024.

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