Lenovo ThinkAgile VX7820 Appliance and VX 4U Certified Nodes (Intel Xeon SP Gen 2)
Product Guide (withdrawn product)

The Lenovo ThinkAgile VX7820 Appliance and VX 4U Certified Nodes are 4-socket and 8-socket 4U systems that feature the 2nd Generation Intel Xeon Scalable processors. These systems are based on the ThinkSystem SR950 with up to 28 cores per processor, up to 24 TB of TruDDR4 memory with up to 2933 MHz memory speeds, and an extensive selection of internal storage and networking options. VMware offers a unique, software-defined approach to hyperconvergence, leveraging the hypervisor to deliver compute, storage and management in a tightly integrated software stack.

The 4U systems are available either as an appliance or certified node:

- VX7820 Appliance for high performance workloads, supporting up to 4 processors
- VX 4U Certified Node, supporting up to 4 processors
- VX 4U Certified Node for SAP HANA, supporting up to 8 processors - certified by SAP for deploying SAP HANA solutions on hyperconverged infrastructure (HCI) in production environments.

Common uses for these systems are high-performance workloads such as databases, e-mail and collaboration, and workload-balancing clusters.

Figure 1. Lenovo ThinkAgile VX7820 Appliance and VX 4U Certified Nodes

Did you know?

The ThinkAgile VX7820 Appliance and VX 4U Certified Nodes are built on the Lenovo ThinkSystem SR950 server that features the ultimate in enterprise-class scalability, performance, reliability, management, and security.

The VX7820 Appliance comes paired with Premier Support that offers a single point of support for quick 24/7 problem reporting and resolution.

Key features

ThinkAgile features

The ThinkAgile VX7820 Appliance and VX 4U Certified Nodes offer the following key features:

- Factory-integrated, pre-configured ready-to-go appliances built on proven and reliable Lenovo ThinkSystem servers that provide compute power for a variety of workloads and applications and powered by industry-leading hyperconverged infrastructure software from VMware.
- Provide quick and convenient path to implement a hyperconverged solution powered by VMware Cloud Foundation (VCF) or VMware vSphere Foundation (VVF) software stacks 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 and integrated hardware and firmware that is certified with VMware by Broadcom.
- ThinkAgile Appliances are bundled with Premier Support providing a single-point-of-contact for quick 24/7 hardware and software support, problem reporting and resolution.
- Offer Lenovo deployment services to get customers up and running quickly.

The VMware software running on ThinkAgile VX7820 Appliance and VX 4U Certified Nodes delivers the following key features:

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

Hardware features

The VX systems are based on the SR950 and have the following hardware features:

Scalability and performance

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

- Supports second-generation Intel Xeon Processor Scalable processors
- High-performance scale-out offering where up to 8 processors and 48 DIMMs are housed in 4U of rack space.
- Supports the Gold and Platinum level processors in the Intel Xeon Processor Scalable Family, including the "top bin" highest-performing 205 W processors available from Intel.
- Up to eight processors, each with up to 28 cores and 56 threads to maximize the concurrent execution of multithreaded applications.
- Support for up to 96 TruDDR4 DIMMs operating at up to 2933 MHz means you have the fastest available memory subsystem and memory capacity of up to 24 TB using 96x 256 GB 3DS RDIMMs.
- Supports 2933 MHz Performance+ memory DIMMs which allow configurations of 2 DIMMs per channel to operate at the 2933 MHz rated memory speed.
- Up to 24x 2.5-inch SSDs provide a flexible and scalable all-in-one platform to meet your increasing demands.
- Of the 24x drive bays, support for up to 12 NVMe PCIe SSDs maximizes drive I/O performance, in terms of throughput, bandwidth, IOPS, and latency.
- The use of solid-state drives (SSDs) instead of, or along with, mechanical hard disk drives (HDDs), can improve I/O performance. An SSD can support up to 100 times more I/O operations per second (IOPS) than a typical HDD.
- Supports an M.2 adapter design 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 the boot drive performance and reliability.
- The server has a dedicated flexible LAN-on-motherboard (LOM) slot offering a variety of Ethernet adapters that do not occupy one of the standard PCIe slots.
- A total of up to 17 rear-accessible PCIe slots: 14 general-purpose PCIe 3.0 slots plus slots dedicated to the LOM adapter and two ML2 adapters. In addition, the server has two internal slots for RAID or HBA adapters.
- The server offers PCI Express 3.0 I/O expansion capabilities that improve the theoretical maximum bandwidth by almost 100% (8 GTps per link using 128b/130b encoding) compared to the previous generation of PCI Express 2.0 (5 GTps per link using 8b/10b encoding).

Availability and serviceability

The VX systems are based on a modular service model where all components and options can be removed from the front or rear of the system, even parts that are located in the center of the machine such as fans, memory DIMMs, and processors. The VX7820 and VX 4U Certified Nodes are designed for 99.99% availability.

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

- The server offers Single Device Data Correction (SDDC, also known as Chipkill), Adaptive Double-Device Data Correction (ADDDC, also known as Redundant Bit Steering or RBS), memory mirroring, and memory rank sparing for redundancy in the event of a non-correctable memory failure.
- The Dual M.2 Boot Adapter uses RAID-1 so that the two M.2 drives installed are configured as a redundant pair.
- The server has up to four hot-swap N+N redundant power supplies to help keep the server operational in the event of a power supply or utility supply failure.

- Each compute tray has 6 hot-swap N+1 redundant fans (a total of 12 fans when two compute trays are installed) to maximize availability for business-critical applications.
- The power source-independent light path diagnostics functionality provides individual light path LEDs that lead the technician to failed (or failing) components, which simplifies servicing, speeds up problem resolution, and helps increase system availability.
- The included LCD system information display panel provides greater diagnostic function by listing all error messages and VPD data needed for a service call, thereby speeding problem resolution and increasing system uptime.
- Proactive Platform Alerts (including PFA and SMART alerts): Processors, voltage regulators, memory, internal storage (SAS/SATA HDDs and SSDs, NVMe SSDs, M.2 storage, and flash storage adapters), fans, power supplies, RAID controllers, ambient temperature, and subcomponent temperatures. Alerts can be surfaced through the XClarity Controller to managers such as Lenovo XClarity Administrator, VMware vCenter, and Microsoft System Center. These proactive alerts let you take appropriate actions in advance of possible failure, thereby increasing server uptime and application availability.
- Solid-state drives (SSDs) offer more reliability than mechanical HDDs for greater uptime.
- The built-in XClarity Controller continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failures to minimize downtime.
- Built-in diagnostics in UEFI, using Lenovo XClarity Provisioning Manager, speed up troubleshooting tasks to reduce service time.
- Lenovo XClarity Provisioning Manager supports diagnostic functions and collects service data to USB key drive or remote CIFS share folder for troubleshooting, to reduce servicing time.
- Auto-restart in the event of a momentary loss of AC power (based on power policy setting in the XClarity Controller service processor).
- Support for the XClarity Administrator Mobile app running on a supported smartphone and connected to the server through the service-enabled USB port, enables additional local systems management functions.
- Three-year or one-year customer-replaceable unit and onsite limited warranty, 9 x 5 next business day. Optional service upgrades are available.

Manageability and security

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

- The server includes an XClarity Controller (XCC) to monitor server availability and perform remote management. XCC Enterprise is included as standard, which enables remote KVM and remote media files (ISO and IMG image files), boot capture, and power capping.
- Lenovo XClarity Administrator offers comprehensive hardware management tools that help to increase uptime, reduce costs, and improve productivity through advanced server management capabilities.
- New 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.
- Integrated Trusted Platform Module (TPM) 2.0 support enables advanced cryptographic functionality, such as digital signatures and remote attestation.
- Supports Secure Boot to ensure that only a digitally signed operating system can be used. Supported with HDDs and SSDs as well as M.2 drives in the M.2 Adapter.
- Industry-standard Advanced Encryption Standard (AES) NI support for faster, stronger encryption.
- Intel Execute Disable Bit functionality can prevent certain classes of malicious buffer overflow attacks when combined with a supported operating system.
- Intel Trusted Execution Technology provides enhanced security through hardware-based resistance to malicious software attacks, allowing an application to run in its own isolated space, protected from all other software running on a system.

Energy efficiency

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

- The server can be used in environments up to ASHRAE A4 with ambient temperatures up to 45 °C.
- The server is Energy Star 3.0 compliant.
- Energy-efficient planar components help lower operational costs.
- High-efficiency power supplies with 80 PLUS Platinum certifications
- Intel Intelligent Power Capability powers individual processor elements on and off as needed, to reduce energy draw.
- Low-voltage 1.2 V DDR4 memory offers energy savings compared to 1.35 V and 1.5 V DDR3 DIMMs.
- Solid-state drives (SSDs) consume as much as 80% less power than mechanical 2.5-inch HDDs.
- Optional Lenovo XClarity Energy Manager provide advanced data center power notification, analysis, and policy-based management to help achieve lower heat output and reduced cooling needs.

Components and connectors

The ThinkAgile VX7820 Appliance and VX 4U Certified Nodes are based on the ThinkSystem SR950 server.

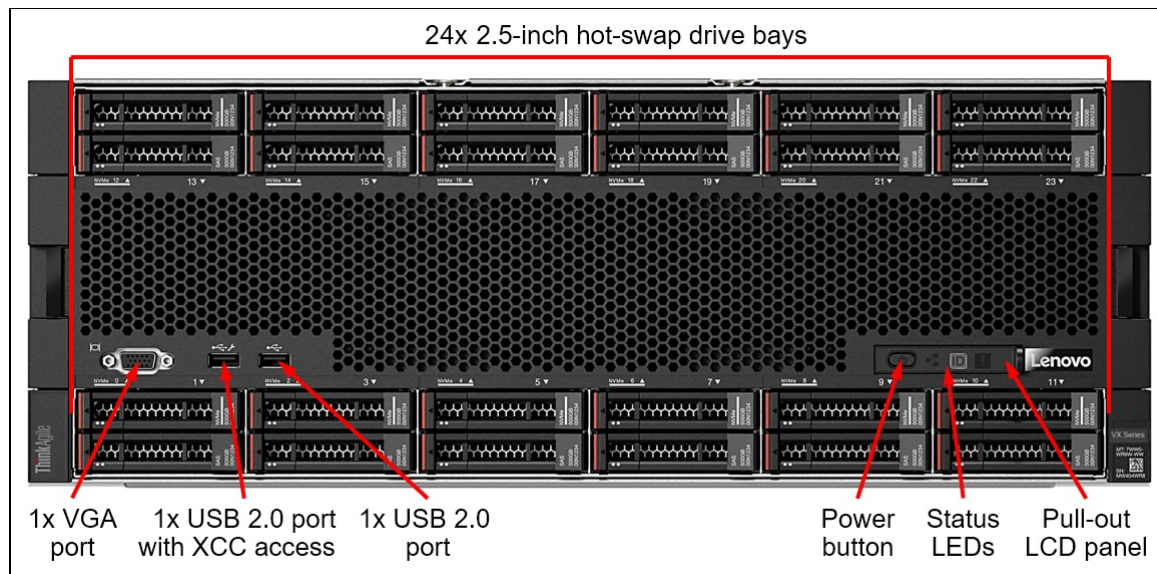The following figure shows the front view of the VX systems.

Figure 2. VX7820 and VX 4U Certified Nodes front view

The front of the ThinkAgile VX7820 Appliance and VX 4U Certified Nodes includes the following components:

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

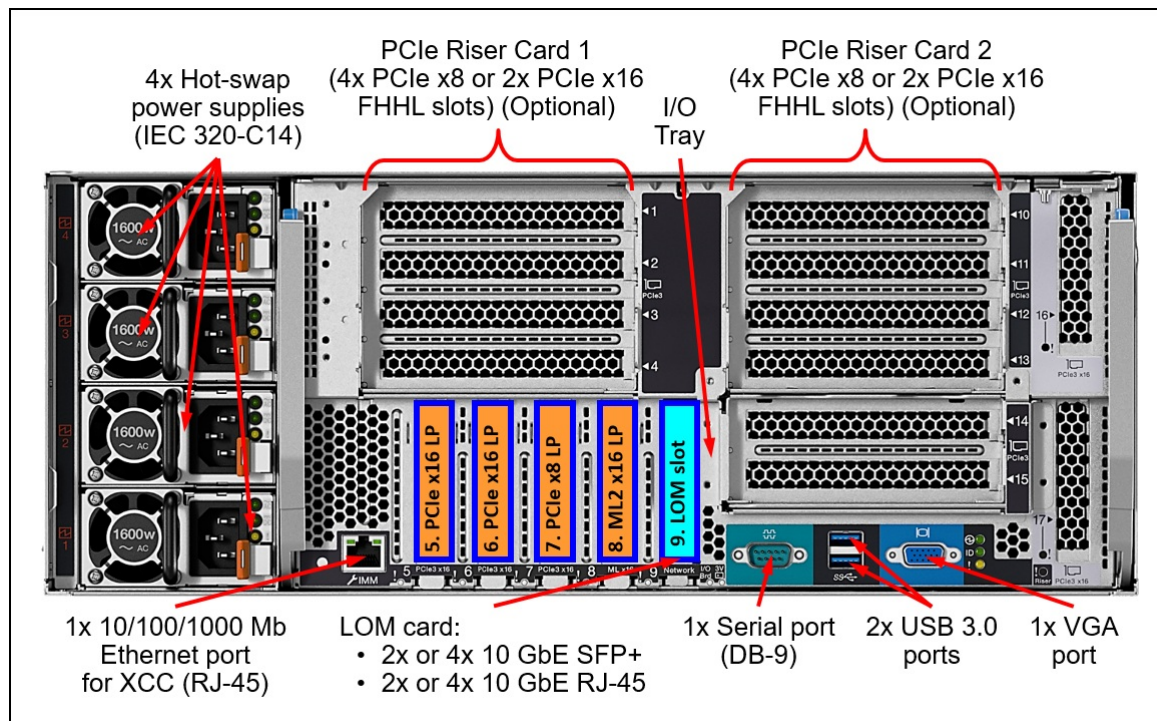The following figure shows the rear view of the VX systems.

Figure 3. VX7820 and VX 4U Certified Nodes rear view

The rear of the ThinkAgile VX7820 Appliance and VX 4U Certified Nodes includes the following components:

- PCIe Riser Card 1 (optional): Up to four PCIe slots
- I/O Tray:
    - Three PCIe slots
    - One ML2 slot
    - One LOM card slot
- PCIe Riser Card 2 (optional): Up to four PCIe slots
- One 1 GbE port for XClarity Controller
- One DB-9 serial port
- Two USB 3.0 ports
- One VGA port
- Two or four hot-swap power supplies (four power supplies shown)

Standard specifications

The ThinkAgile VX7820 Appliance and VX 4U Certified Nodes are based on the ThinkSystem SR950 server.

The following table provides an overview comparison between the VX systems.

Table 1. Comparison of features

	VX7820	VX 4U	VX 4U for HANA
VX offering type	Appliance	Certified Node	Certified Node
Target workloads	High performance	High performance	SAP HANA
Base MTM	7Z13CTO1WW	7Z12CTO1WW	7Z12CTO2WW
Form Factor	4U	4U	4U
Base platform	SR950	SR950	SR950
CPU	2x or 4x Intel Xeon SP Gen 2	2x or 4x Intel Xeon SP Gen 2	2x, 4x or 8x Intel Xeon SP Gen 2
Memory	48x DDR4 2933 MHz (12 TB max)	48x DDR4 2933 MHz (12 TB max)	48x DDR4 2933 MHz (12 TB max)
Hot-swap drive bays	Up to 24x 2.5", either: ● All SAS/SATA ● 50/50: SAS/SATA & AnyBay	Up to 24x 2.5", either: ● All SAS/SATA ● 50/50: SAS/SATA & AnyBay	Up to 24x 2.5", either: ● All SAS/SATA ● 50/50: SAS/SATA & AnyBay
Drive Configuration	All Flash	All Flash	All Flash
Disk Groups	2 - 5	2 - 5	2 - 4
HBA	430-8i HBA 430-16i HBA Onboard NVMe	430-8i HBA 430-16i HBA Onboard NVMe	430-8i HBA 430-16i HBA Onboard NVMe
Boot drives	2x M.2 SATA	2x M.2 SATA	2x M.2 SATA
LOM networking	1x LOM adapter, 1Gb or 10Gb	1x LOM adapter, 1Gb or 10Gb	1x LOM adapter, 1Gb or 10Gb
PCIe networking	Up to 14x adapters 10Gb, 25Gb, 40Gb, 100Gb	Up to 14x adapters 10Gb, 25Gb, 40Gb, 100Gb	Up to 14x adapters 10Gb, 25Gb, 40Gb, 100Gb
GPUs	No support	No support	No support
Hypervisor	VMware ESXi	VMware ESXi	VMware ESXi

The following table lists the system specifications of the ThinkAgile VX7820 Appliance and VX 4U Certified Nodes.

Table 2. System specifications

Attribute	Specification
Machine types	7Z13 - VX7820 7Z12 - 4U Certified Nodes
Form factor	4U Rack-mount
Cluster Size	With Lenovo ThinkAgile VX Series & VMware Cloud Foundation (VCF), you need a minimum of 4 nodes to create a management domain cluster. With Lenovo ThinkAgile VX Series & VMware vSphere Foundation (VVF), you can create a vSAN cluster with a minimum 3 hosts and a maximum of 64 hosts. Requires vSAN 7.0 and later releases.
Processors	VX7820 and VX 4U Certified Node: 2x or 4x 2nd Gen Intel Xeon Scalable processors VX 4U Certified Node for SAP HANA: 2x, 4x or 8x 2nd Gen Intel Xeon Scalable processors
Chipset	Intel C624
Memory	48 DIMM slots (up to 12 DIMMs per processor; six memory channels per processor with two DIMMs per channel) with support for RDIMMs and 3DS RIMMs up to 2933 MHz.
Persistent Memory	No support
Memory protection	Error correction code (ECC), Single Device Data Correction (SDDC; for x4-based memory DIMMs), Adaptive Double Device Data Correction (ADDDC; for x4-based memory DIMMs and Intel Xeon Gold or Platinum processors), patrol scrubbing, and demand scrubbing.
Memory capacity	Up to 24 TB using 96x 256 GB 3DS RDIMMs **Note:** Node configurations with more than 1 TB of memory capacity per socket require processors that support up to 4.5 TB (L-suffix) per socket.
Drive bays	Up to 24x 2.5" hot-swap SAS/SATA drive bays, configured using up to 6x 4-bay backplanes. Two backplane choices: ● SAS/SATA backplane - 4x drives bays supporting SAS or SATA drives ● SAS/SATA/NVMe backplane, 4x bays total: 2x drives bays supporting SAS or SATA drives, plus 2x drive bays supporting SAS or SATA or NVMe drive bays. With 6x SAS/SATA/NVMe backplanes, the system supports 24 SAS/SATA drives or 12 SAS/SATA + 12 NVMe drives. NVMe drives use a PCIe 3.0 x4 connection. A minimum of 2 backplanes are required.
Disk groups	● VX7820: 2-5 disk groups ● VX 4U Certified Node: 2-5 disk groups ● VX 4U Certified Node for SAP HANA: 2-4 disk groups

Storage controller	● 12 Gbps SAS/6 Gbps SATA (non-RAID):
	   ○ 430-8i HBA.
	   ○ 430-16i HBA.
	● NVMe PCIe (non-RAID): Onboard NVMe.

Network interfaces	Integrated 10Gb Ethernet controller, based on the Intel Ethernet Connection X722. Supports a 1Gb or 10Gb LOM adapter. Supports 1 or 2 ML2 adapters. Supports up to 14 PCIe network adapters, ranging from 1Gb to 100Gb Ethernet.
Boot volume	2x M.2 non-hot-swap SSDs (RAID-1).

Attribute	Specification

I/O expansion slots	Up to 17 PCIe 3.0 rear-accessible slots:
	
	- Slots 1-4 on a riser, one of:
	  - Riser with 4x PCIe 3.0 x16 slots, all full-height half-length, all 75W
	  - Riser with 2x PCIe 3.0 x16 slots, all full-height half-length, both 75W
	  - Riser with 4x PCIe 3.0 x8 slots, full-height half-length, all 75W
	- Slot 5: PCIe 3.0 x16, low-profile, 75W
	- Slot 6: PCIe 3.0 x16, low-profile, 75W
	- Slot 7: PCIe 3.0 x8, low-profile, 75W
	- Slot 8: PCIe 3.0 x16 ML2, low-profile (supports NC-SI)
	- Slot 9: PCIe 3.0 x8 LOM adapter slot, low-profile (supports NC-SI)
	- Slots 10-15 on a riser, one of:
	  - Riser 5x16+ML2:
	    - Five PCIe 3.0 x16 slots, all full-height half-length, all 75W
	    - One PCIe 3.0 x16 ML2 slot, full-height half-length, 30W (no NC-SI support)
	  - Riser 2x16: Two PCIe 3.0 x16 slots, all full-height half-length, both 75W
	  - Riser 4x8: Four PCIe 3.0 x8 slots, full-height half-length, all 75W
	- Slot 16-17 on a riser:
	  - PCIe 3.0 x8 low profile, 75W
	  - PCIe 3.0 x8 low profile, 75W
	
	Additional internal PCIe slots:
	
	- One or two PCIe 3.0 x8 slots for storage adapters
	- M.2 adapter slot

Ports	- Front: 1x USB 2.0 port with XClarity Controller access, 1x USB 3.0 port, 1x VGA port. - Rear: 2x USB 3.0 ports, 1x VGA port, 1x DB-9 serial port, 1x RJ-45 10/100/1000 Mb Ethernet port for systems management.
Cooling	Six hot-swap fans with N+1 redundancy in the compute tray.
Power supply	Two or four redundant hot-swap 1100 W (100 - 240 V), 1600 W (200 - 240 V), or 2000 W (200 - 240 V) High Efficiency power supplies (80 PLUS Platinum certified).
Video	Matrox G200 with 16 MB memory integrated into the XClarity Controller. Maximum resolution is 1920x1200 at 60 Hz with 32 bits per pixel.
Hot-swap parts	SSDs and HDDs, power supplies, and fans.
Systems management	Lenovo XClarity Controller (XCC) Enterprise (Pilot 4 chip), proactive platform alerts, light path diagnostics, Lenovo XClarity Administrator and XClarity Pro, Lenovo XClarity Integrator for VMware vCenter (optional), Lenovo XClarity Energy Manager (optional).
Security features	Power-on password, administrator's password, secure firmware updates, Trusted Platform Module (TPM) 1.2 or 2.0 (configurable UEFI setting).

Attribute	Specification
Software	All ThinkAgile VX Series products (Integrated Systems and Certified Nodes) will support the following Primary Software Stack (3-year & 5-year terms) and Add-Ons. Primary Software 1. VMware Cloud Foundation 5 (VCF) 2. VMware vSphere Foundation 8 (VVF) Add-On Options (requires purchase of a Primary Software version) 1. VMware vSAN 8 (for capacity over TiB allocation from primary SKU) 2. VMware Live Recovery 3. VMware Firewall (requires VCF) 4. VMware Firewall with Advanced Threat Prevention (requires VCF) 5. VMware Avi Load Balancer 6. VMware Private AI Foundation (requires VCF)
Hypervisors	VMware ESXi
Warranty and support	Three-, four-, or five-year customer-replaceable unit and onsite limited warranty with selectable service levels: 9x5 coverage with next business day (NBD) parts delivered (base warranty), 9x5 coverage with NBD onsite response (Foundation Service), 24x7 coverage with 4-hour onsite response or 24-hour committed repair (select areas) (Essential Service), or 24x7 coverage with 2-hour onsite response or 6-hour committed repair (select areas) (Advanced Service). Also available are 1-year and 2-year post-warranty extensions, and YourDrive YourData.
Software maintenance	One-, three-, or five-year software support and subscription is included with the VMware software licenses available from Lenovo (optional).
Dimensions	Height: 173 mm (6.8 in.), width: 447 mm (17.6 in.), depth: 800 mm (31.5 in.)
Weight	Maximum configuration: 58.7 kg (129.4 lb)

Models

Factory-integrated models of the ThinkAgile VX Series Appliances are configured by using the Lenovo Data Center Solution Configurator (DCSC), http://dcsc.lenovo.com.

During the configuration process, you are selecting one of the Configure-to-Order (CTO) base models first, and then you are adding components (processors, memory, drives, and network adapters) to the selected model.

> **Note:** You are required to engage a Lenovo representative in the project that includes the ThinkAgile VX Series Appliances. ThinkAgile VX certified nodes do not have this requirement.

The following table lists the CTO base models.

> **Withdrawn**: The ThinkAgile VX systems described in this product guide are now withdrawn from marketing.

Table 3. CTO base models

Machine Type/Model	Description
7Z13CTO1WW	ThinkAgile VX7820 Appliance
7Z12CTO1WW	ThinkAgile VX 4U Certified Node
7Z12CTO2WW	ThinkAgile VX 4U Certified Node for SAP HANA

Comparison with the ThinkSystem SR950

The ThinkAgile VX7820 Appliance and VX 4U Certified Nodes are based on the ThinkSystem SR950 server, however there are key differences:

- No RAID adapter support
- No VROC RAID support
- No HDD support
- No SED drive support
- No Fibre Channel support
- No InfiniBand support
- Drives are categorized as Cache or Capacity drives and are formed as disk groups (up to 5 disk groups)

For details about the ThinkSystem SR950, see the SR950 product guide:
https://lenovopress.com/lp1054-thinksystem-sr950-server-xeon-sp-gen-2

To verify what specific hardware components are supported with the VX7820 and VX 4U Certified Nodes, see the DCSC configurator:
https://dcsc.lenovo.com

Processors

The VX7820 and VX 4U Certified Nodes systems support two or four processors. The VX 4U HANA system also supports eight processors. For the VX 4U HANA system, support for eight processors requires that the 8S feature code be selected at ordering, as listed in the following table.

Table 4. Feature codes for 4-socket and 8-socket configurations

Feature	Description	Maximum supported		
		VX7820	VX 4U	VX 4U HANA
BD1L	ThinkAgile 4U 4S	1	1	1
BF07	ThinkAgile 4U 8S	No	No	1

The following table lists the supported processors.

For details about these processors, including configuration rules, see the SR950 product guide:
https://lenovopress.com/lp1054-thinksystem-sr950-server-xeon-sp-gen-2#processors

Table 5. Processor choices

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
4XG7A14952	B4HN	Intel Xeon Gold 5215 10C 85W 2.5GHz Processor	4	4	8
4XG7A14966	B4P9	Intel Xeon Gold 5215L 10C 85W 2.5GHz Processor	4	4	8
4XG7A14951	B4HM	Intel Xeon Gold 5217 8C 115W 3.0GHz Processor	4	4	8
4XG7A14950	B4HL	Intel Xeon Gold 5218 16C 125W 2.3GHz Processor	4	4	8
4XG7A37044	B6BS	Intel Xeon Gold 5218B 16C 125W 2.3GHz Processor	4	4	8
4XG7A14961	B4P3	Intel Xeon Gold 5218T 16C 105W 2.1GHz Processor	4	4	8
4XG7A14949	B4HK	Intel Xeon Gold 5220 18C 125W 2.2GHz Processor	4	4	8
4XG7A16677	B6CW	Intel Xeon Gold 5220S 18C 125W 2.7GHz Processor	4	4	8
4XG7A16671	B6CQ	Intel Xeon Gold 5220T 18C 105W 1.9GHz Processor	4	4	8
4XG7A16662	B5S1	Intel Xeon Gold 5222 4C 105W 3.8GHz Processor	4	4	8
4XG7A16676	B6CV	Intel Xeon Gold 6222V 20C 115W 1.8GHz Processor	4	4	8
4XG7A16667	B6CL	Intel Xeon Gold 6226 12C 125W 2.7GHz Processor	4	4	8
4XG7A14944	B4HJ	Intel Xeon Gold 6230 20C 125W 2.1GHz Processor	4	4	8
4XG7A16663	B5RY	Intel Xeon Gold 6230N 20C 125W 2.3GHz Processor	4	4	8
4XG7A16670	B6CP	Intel Xeon Gold 6230T 20C 125W 2.1GHz Processor	4	4	8
4XG7A16666	B6CK	Intel Xeon Gold 6234 8C 130W 3.3GHz Processor	4	4	8
4XG7A16665	B6CJ	Intel Xeon Gold 6238 22C 140W 2.1GHz Processor	4	4	8
4XG7A16672	B6CR	Intel Xeon Gold 6238L 22C 140W 2.1GHz Processor	4	4	8
4XG7A14960	B4P2	Intel Xeon Gold 6238T 22C 125W 1.9GHz Processor	4	4	8
4XG7A14947	B4HH	Intel Xeon Gold 6240 18C 150W 2.6GHz Processor	4	4	8
4XG7A16673	B6CS	Intel Xeon Gold 6240L 18C 150W 2.6GHz Processor	4	4	8
4XG7A14954	B4NV	Intel Xeon Gold 6240Y 18/14/8C 150W 2.6GHz Processor	4	4	8
4XG7A14946	B4HG	Intel Xeon Gold 6242 16C 150W 2.8GHz Processor	4	4	8
4XG7A14945	B4HF	Intel Xeon Gold 6244 8C 150W 3.6GHz Processor	4	4	8
4XG7A14944	B4HE	Intel Xeon Gold 6248 20C 150W 2.5GHz Processor	4	4	8
4XG7A14942	B4HC	Intel Xeon Gold 6252 24C 150W 2.1GHz Processor	4	4	8
4XG7A16674	B6CT	Intel Xeon Gold 6252N 24C 150W 2.3GHz Processor	4	4	8
4XG7A14943	B4HD	Intel Xeon Gold 6254 18C 200W 3.1GHz Processor	4	4	8
4XG7A16675	B6CU	Intel Xeon Gold 6262V 24C 135W 1.9GHz Processor	4	4	8

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
4XG7A16661	B5RZ	Intel Xeon Platinum 8253 16C 125W 2.2GHz Processor	4	4	8
4XG7A16660	B5S2	Intel Xeon Platinum 8256 4C 105W 3.8GHz Processor	4	4	8
4XG7A63481	B4HB	Intel Xeon Platinum 8260 24C 165W 2.4GHz Processor	4	4	8
4XG7A14957	B4P7	Intel Xeon Platinum 8260L 24C 165W 2.4GHz Processor	4	4	8
4XG7A14953	B4NU	Intel Xeon Platinum 8260Y 24/20/16C 165W 2.4GHz Processor	4	4	8
4XG7A14940	B4HA	Intel Xeon Platinum 8268 24C 205W 2.9GHz Processor	4	4	8
4XG7A14939	B4H9	Intel Xeon Platinum 8270 26C 205W 2.7GHz Processor	4	4	8
4XG7A14934	B4H4	Intel Xeon Platinum 8276 28C 165W 2.2GHz Processor	4	4	8
4XG7A14963	B4P6	Intel Xeon Platinum 8276L 28C 165W 2.2GHz Processor	4	4	8
4XG7A14937	B4H7	Intel Xeon Platinum 8280 28C 205W 2.7GHz Processor	4	4	8
4XG7A14962	B4P5	Intel Xeon Platinum 8280L 28C 205W 2.7GHz Processor	4	4	8

Memory

The VX7820 and VX 4U Certified Nodes systems support the following memory options. The systems support 24 or 48 DIMMs with four processors. VX 4U HANA systems support 96 DIMMs with eight processors.

For details about these options, including configuration rules, see the SR950 product guide: https://lenovopress.com/lp1054-thinksystem-sr950-server-xeon-sp-gen-2#memory

Table 6. Memory options

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
2933 MHz RDIMMs					
4ZC7A08707	B4LY	ThinkSystem 16GB TruDDR4 2933 MHz (1Rx4 1.2V) RDIMM	48	48	96
4ZC7A08708	B4H2	ThinkSystem 16GB TruDDR4 2933MHz (2Rx8 1.2V) RDIMM	48	48	96
4ZC7A08709	B4H3	ThinkSystem 32GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM	48	48	96
4ZC7A08710	B4H4	ThinkSystem 64GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM	48	48	96
2933 MHz 3DS RDIMMs					
4ZC7A15113	B587	ThinkSystem 128GB TruDDR4 2933MHz (4Rx4 1.2V) 3DS RDIMM	48	48	96
4ZC7A08727	B4Y3	ThinkSystem 256GB TruDDR4 2933MHz (8Rx4 1.2V) 3DS RDIMM	48	48	96
2933 MHz Performance+ RDIMMs					
4X77A12184	B5N6	ThinkSystem 16GB TruDDR4 Performance+ 2933MHz (2Rx8 1.2V) RDIMM	48	48	96
4X77A12185	B5N7	ThinkSystem 32GB TruDDR4 Performance+ 2933MHz (2Rx4 1.2V) RDIMM	48	48	96
4X77A12186	B5N8	ThinkSystem 64GB TruDDR4 Performance+ 2933MHz (2Rx4 1.2V) RDIMM	48	48	96
2933 MHz Performance+ 3DS RDIMMs					
4X77A12187	B5N9	ThinkSystem 128GB TruDDR4 Performance+ 2933MHz (4Rx4 1.2V) 3DS RDIMM	48	48	96
4X77A64957	B5NA	ThinkSystem 256GB TruDDR4 Performance+ 2933MHz (8Rx4 1.2V) 3DS RDIMM	48	48	96

Internal storage

The VX7820 and VX 4U Certified Nodes support up to 24x 2.5-inch hot-swap drive bays, accessible from the front of the system, as shown in the following figure. Drive bays are installed in sets of 4 drives based on the backplanes.

Each backplane is either:

- 4x SAS/SATA, or
- 2x SAS/SATA + 2x SAS/SATA/NVMe

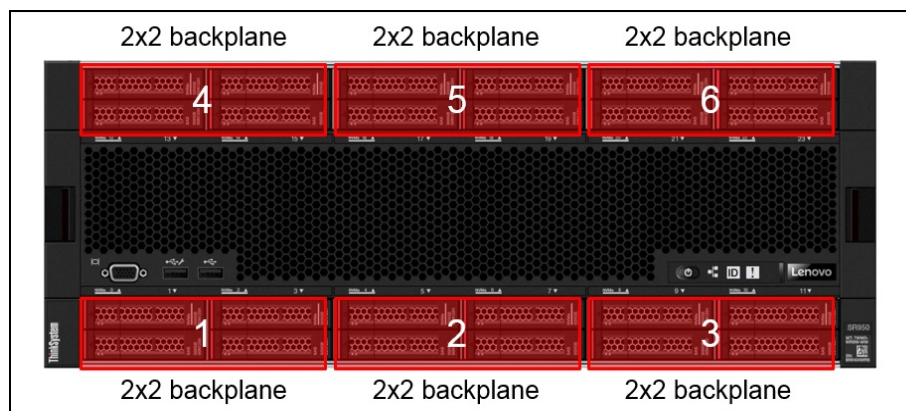A minimum of 2 backplanes (8 drive bays) is required.

Figure 4. Location of backplanes

Ordering information is listed in the following table.

Table 7. Drive backplanes

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
7XB7A03966	AUN6	ThinkSystem 2.5" SAS/SATA 2x2 Bay Backplane Kit Support for 4x SAS/SATA drives	6	6	6
7XB7A03965	AUN5	ThinkSystem 2.5" SAS/SATA/NVMe 2x2 Bay Backplane Kit Support for 2x SAS/SATA drives and 2x SAS/SATA/NVMe drives	6	6	6

The server also supports either one or two M.2 drives for OS boot purposes, installed in an M.2 adapter, internal to the server.

For details about these components, including configuration rules, see the SR950 product guide: https://lenovopress.com/lp1054-thinksystem-sr950-server-xeon-sp-gen-2#internal-storage

Disk Groups

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

Table 8. Disk Groups

Drive Selection Rules	VX7820	VX 4U	VX 4U HANA
Model Type	All Flash (AF)	All Flash (AF)	All Flash (AF)
Maximum number of drives	24	24	24
Number of Disk Groups	2 - 5	2 - 5	2 - 4
Number of Cache drives per Disk Group	1	1	1
Number of Capacity drives per Disk Group	2 - 7	2 - 7	2 - 7
Allowed Capacity Drive quantities:			
1 Disk Group (1 Cache drive)	No support	No support	No support
2 Disk Groups (2 Cache drives)	4, 6, 8, 10, 12 or 14	4, 6, 8, 10, 12 or 14	4, 6, 8, 10, 12 or 14
3 Disk Groups (3 Cache drives)	6, 9, 12, 15, 18 or 21	6, 9, 12, 15, 18 or 21	6, 9, 12, 15, 18 or 21
4 Disk Groups (4 Cache drives)	8, 12, 16 or 20	8, 12, 16 or 20	8, 12, 16 or 20
5 Disk Groups (5 Cache drives)	5, 10 or 15	5, 10 or 15	No support

Controllers for internal storage

The VX7820 and VX 4U Certified Nodes systems support the following storage controller options.

Table 9. Controllers for internal storage

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
7Y37A01088	AUNL	ThinkSystem 430-8i SAS/SATA 12Gb HBA	2	2	2
4Y37A78601	BM51	ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA	2	2	2
7Y37A01089	AUNM	ThinkSystem 430-16i SAS/SATA 12Gb HBA	2	2	2
4Y37A78602	BM50	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA	2	2	2

Internal drive options

This section lists the supported drives:

- Boot drives
- Internal drives for VX7820
- Internal drives for VX 4U Certified Node
- Internal drives for VX 4U for SAP HANA Certified Node

Configuration Note: VMware will no longer support higher capacity drives greater than 8TB

Boot drives

The VX7820 and VX 4U Certified Nodes systems support the following drive for boot functions.

Table 10. Boot drives

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
4XB7A82286	BQ1Z	ThinkSystem M.2 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD	2	2	2
4XB7A82287	BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	2	2	2
4XB7A82288	BQ20	ThinkSystem M.2 5400 PRO 960GB Read Intensive SATA 6Gb NHS SSD	2	2	2

Internal drives for VX7820 Appliance

The following table lists the drives supported in the VX7820 Appliance. Drives are classified as either Cache drives, Capacity drives, or both.

Table 11. Drives supported in the VX7820 Appliance

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
2.5-inch hot-swap 24 Gb SAS SSDs				
4XB7A80318	BNWC	ThinkSystem 2.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80319	BNWE	ThinkSystem 2.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80322	BP3J	ThinkSystem 2.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80342	BNW6	ThinkSystem 2.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80343	BP3K	ThinkSystem 2.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD	24	24
2.5-inch hot-swap 12 Gb SAS SSDs				
4XB7A83214	BR10	ThinkSystem 2.5" Nytro 3750 400GB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83215	BR0Z	ThinkSystem 2.5" Nytro 3750 800GB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83216	BR0Y	ThinkSystem 2.5" Nytro 3750 1.6TB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83217	BR0X	ThinkSystem 2.5" Nytro 3750 3.2TB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A17056	BC4R	ThinkSystem 2.5" PM1643a 15.36TB Entry SAS 12Gb Hot Swap SSD	24	24
2.5-inch hot-swap 6 Gb SAS SSDs				
4XB7A17080	B8J2	ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD	No	24
4XB7A17089	B8J6	ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	24	24
4XB7A17090	B8JE	ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD	24	24
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	No	24

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A72442	BM87	ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82258	BQ1Q	ThinkSystem 2.5" 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82259	BQ1P	ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82260	BQ1R	ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82261	BQ1X	ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82262	BQ1S	ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82263	BQ1T	ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A13637	B49Q	ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82289	BQ21	ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82290	BQ24	ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82291	BQ22	ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82292	BQ23	ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
2.5-inch hot-swap PCIe 4.0 NVMe SSDs				
4XB7A17145	BCFT	ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79646	BNF3	ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A83097	BQAV	ThinkSystem 2.5" U.3 7450 PRO 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79639	BNF1	ThinkSystem 2.5" U.3 7450 MAX 800GB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13970	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12

Internal drives for VX 4U Certified Node

The following table lists the drives supported in the VX 4U Certified Node. Drives are classified as either Cache drives, Capacity drives, or both.

Table 12. Drives supported in the VX 4U Certified Node

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
2.5-inch hot-swap 24 Gb SAS SSDs				
4XB7A80318	BNWC	ThinkSystem 2.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80319	BNWE	ThinkSystem 2.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80322	BP3J	ThinkSystem 2.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80342	BNW6	ThinkSystem 2.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80343	BP3K	ThinkSystem 2.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD	24	24
2.5-inch hot-swap 12 Gb SAS SSDs				

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
4XB7A83214	BR10	ThinkSystem 2.5" Nytro 3750 400GB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83215	BR0Z	ThinkSystem 2.5" Nytro 3750 800GB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83216	BR0Y	ThinkSystem 2.5" Nytro 3750 1.6TB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83217	BR0X	ThinkSystem 2.5" Nytro 3750 3.2TB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A17056	BC4R	ThinkSystem 2.5" PM1643a 15.36TB Entry SAS 12Gb Hot Swap SSD	24	24
2.5-inch hot-swap 6 Gb SAS SSDs				
4XB7A17080	B8J2	ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD	No	24
4XB7A17089	B8J6	ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	24	24
4XB7A17090	B8JE	ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD	24	24
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A72442	BM87	ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82258	BQ1Q	ThinkSystem 2.5" 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82259	BQ1P	ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82260	BQ1R	ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82261	BQ1X	ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82262	BQ1S	ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82263	BQ1T	ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A13637	B49Q	ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82289	BQ21	ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82290	BQ24	ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82291	BQ22	ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	24	24

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
4XB7A82292	BQ23	ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
2.5-inch hot-swap PCIe 4.0 NVMe SSDs				
4XB7A17145	BCFT	ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79646	BNF3	ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A83097	BQAV	ThinkSystem 2.5" U.3 7450 PRO 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79639	BNF1	ThinkSystem 2.5" U.3 7450 MAX 800GB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13970	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12

Internal drives for VX 4U Certified Node for SAP HANA

The following table lists the drives supported in the VX 4U Certified Node for SAP HANA. Drives are classified as either Cache drives, Capacity drives, or both.

Table 13. Drives supported in the VX 4U Certified Node for SAP HANA

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
2.5-inch hot-swap 24 Gb SAS SSDs				
4XB7A80318	BNWC	ThinkSystem 2.5" PM1653 960GB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80319	BNWE	ThinkSystem 2.5" PM1653 1.92TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80322	BP3J	ThinkSystem 2.5" PM1653 15.36TB Read Intensive SAS 24Gb HS SSD	No	24
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80342	BNW6	ThinkSystem 2.5" PM1655 3.2TB Mixed Use SAS 24Gb HS SSD	24	24
4XB7A80343	BP3K	ThinkSystem 2.5" PM1655 6.4TB Mixed Use SAS 24Gb HS SSD	24	24
2.5-inch hot-swap 12 Gb SAS SSDs				
4XB7A83214	BR10	ThinkSystem 2.5" Nytro 3750 400GB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83215	BR0Z	ThinkSystem 2.5" Nytro 3750 800GB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83216	BR0Y	ThinkSystem 2.5" Nytro 3750 1.6TB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A83217	BR0X	ThinkSystem 2.5" Nytro 3750 3.2TB Write Intensive SAS 12Gb HS SSD	24	24
4XB7A17056	BC4R	ThinkSystem 2.5" PM1643a 15.36TB Entry SAS 12Gb Hot Swap SSD	24	24
2.5-inch hot-swap 6 Gb SAS SSDs				
4XB7A17080	B8J2	ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD	No	24
4XB7A17089	B8J6	ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	24	24
4XB7A17090	B8JE	ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD	24	24
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A72442	BM87	ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82258	BQ1Q	ThinkSystem 2.5" 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82259	BQ1P	ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82260	BQ1R	ThinkSystem 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82261	BQ1X	ThinkSystem 2.5" 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD	No	24

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
4XB7A82262	BQ1S	ThinkSystem 2.5" 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A82263	BQ1T	ThinkSystem 2.5" 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD	No	24
4XB7A13637	B49Q	ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82289	BQ21	ThinkSystem 2.5" 5400 MAX 480GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82290	BQ24	ThinkSystem 2.5" 5400 MAX 960GB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82291	BQ22	ThinkSystem 2.5" 5400 MAX 1.92TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A82292	BQ23	ThinkSystem 2.5" 5400 MAX 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
2.5-inch hot-swap PCIe 4.0 NVMe SSDs				
4XB7A17145	BCFT	ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	12
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79646	BNF3	ThinkSystem 2.5" U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A83097	BQAV	ThinkSystem 2.5" U.3 7450 PRO 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A79639	BNF1	ThinkSystem 2.5" U.3 7450 MAX 800GB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13970	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	12

Network adapters

The VX7820 and VX 4U Certified Nodes systems support the following networking options.

For details about these options, including configuration rules, see the SR950 product guide:
https://lenovopress.com/lp1054-thinksystem-sr950-server-xeon-sp-gen-2#network-adapters#i-o-expansion
https://lenovopress.com/lp1054-thinksystem-sr950-server-xeon-sp-gen-2#network-adapters#network-adapters

Table 14. LOM network adapters

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
Gigabit Ethernet					
7ZT7A00544	AUKG	ThinkSystem 1Gb 2-port RJ45 LOM	1	1	1
7ZT7A00545	AUKH	ThinkSystem 1Gb 4-port RJ45 LOM	1	1	1
10 Gb Ethernet					
7ZT7A00546	AUKJ	ThinkSystem 10Gb 2-port SFP+ LOM	1	1	1
7ZT7A00547	AUKK	ThinkSystem 10Gb 4-port SFP+ LOM	1	1	1
7ZT7A00548	AUKL	ThinkSystem 10Gb 2-port Base-T LOM	1	1	1
7ZT7A00549	AUKM	ThinkSystem 10Gb 4-port Base-T LOM	1	1	1

Table 15. ML2 network adapters

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
10 Gb Ethernet					
00JY940	ATRH	Intel X710-DA2 ML2 2x10GbE SFP+ Adapter	2	2	2
7ZT7A00497	AUKQ	ThinkSystem Broadcom NX-E ML2 10Gb 2-Port Base-T Ethernet Adapter	2	2	2
01CV770	AU7Z	Emulex VFA5.2 ML2 2x10 GbE SFP+ Adapter and FCoE/iSCSI SW	2	2	2
25 Gb Ethernet					
7ZT7A00507	AUKU	ThinkSystem Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-Port ML2 Ethernet Adapter	2	2	2
00MN990	ATZR	Mellanox ConnectX-4 Lx 10/25GbE SFP28 1-port ML2 Adapter	2	2	2

Table 16. PCIe network adapters

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
Gigabit Ethernet					
7ZT7A00482	AUZX	ThinkSystem Broadcom 5720 1GbE RJ45 2-Port PCIe Ethernet Adapter	14	14	14
7ZT7A00484	AUZV	ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter	14	14	14
7ZT7A00533	AUZZ	ThinkSystem I350-F1 PCIe 1Gb 1-Port SFP Ethernet Adapter	14	14	14

Part number	Feature	Description	Maximum supported		
			VX7820	VX 4U	VX 4U HANA
7ZT7A00534	AUZY	ThinkSystem I350-T2 PCIe 1Gb 2-Port RJ45 Ethernet Adapter	14	14	14
7ZT7A00535	AUZW	ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter	14	14	14
10 Gb Ethernet - 10GBASE-T					
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	14	14	14
00MM860	ATPX	Intel X550-T2 Dual Port 10GBase-T Adapter	14	14	14
4XC7A08225	B31G	ThinkSystem QLogic QL41134 PCIe 10Gb 4-Port Base-T Ethernet Adapter	14	14	14
4XC7A79699	BMXB	ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter	14	14	14
10 Gb Ethernet - SFP+					
7ZT7A00537	AUKX	ThinkSystem Intel X710-DA2 PCIe 10Gb 2-Port SFP+ Ethernet Adapter	14	14	14
7ZT7A00493	AUKN	ThinkSystem Emulex OCe14104B-NX PCIe 10Gb 4-Port SFP+ Ethernet Adapter	9	9	9
00AG570	AT7S	Emulex VFA5.2 2x10 GbE SFP+ PCIe Adapter	14	14	14
25 Gb Ethernet					
7ZT7A00505	AUKS	ThinkSystem Broadcom 57412 25GbE SFP28 1-Port PCIe Ethernet Adapter	14	14	14
4XC7A08238	B5T0	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter	14	14	14
7XC7A05523	B0WY	ThinkSystem Intel XXV710-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	14	14	14
01GR250	AUAJ	Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port PCIe Ethernet Adapter	14	14	14
4XC7A08229	B31C	ThinkSystem Mellanox ConnectX-5 Ex 25/40GbE 2-port Low-Latency Adapter	11	11	11
4XC7A08228	B21R	ThinkSystem QLogic QL41262 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	14	14	14
4XC7A62580	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	14	14	14
40 Gb Ethernet					
00MM950	ATRN	Mellanox ConnectX-4 Lx 1x40GbE QSFP+ Adapter	14	14	14
4XC7A08229	B31C	ThinkSystem Mellanox ConnectX-5 Ex 25/40GbE 2-port Low-Latency Adapter	11	11	11
100 Gb Ethernet					
4XC7A08248	B8PP	ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter	11	11	11
00MM960	ATRP	Mellanox ConnectX-4 2x100GbE/EDR IB QSFP28 VPI Adapter	11	11	11
4C57A14177	B4R9	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 1-port PCIe VPI Adapter	14	14	14
4C57A14178	B4RA	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 2-port PCIe VPI Adapter	14	14	14

Operating system support

The ThinkAgile VX7820 Appliance supports the following operating systems:

- VMware ESXi 6.5 U3
- VMware ESXi 6.7 U3
- VMware ESXi 7.0
- VMware ESXi 7.0 U1
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3
- VMware ESXi 8.0 U1
- VMware ESXi 8.0 U2
- VMware ESXi 8.0 U3

The ThinkAgile VX 4U Certified Node supports the following operating systems:

- VMware ESXi 6.5 U3
- VMware ESXi 6.7 U3
- VMware ESXi 7.0
- VMware ESXi 7.0 U1
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3
- VMware ESXi 8.0 U1
- VMware ESXi 8.0 U2
- VMware ESXi 8.0 U3

The ThinkAgile VX 4U Certified Node for SAP HANA supports the following operating systems:

- VMware ESXi 6.5 U3
- VMware ESXi 6.7 U3
- VMware ESXi 7.0
- VMware ESXi 7.0 U1
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3
- VMware ESXi 8.0 U1
- VMware ESXi 8.0 U2
- VMware ESXi 8.0 U3

For further details, including any restrictions, see the OS Interoperability Guide:
https://lenovopress.com/osig#term=vx%2520purley%25204u%2520%2522gen%25202%2522&support=all

Software

ThinkAgile VX Series offerings are available with the VMware Cloud Foundation (VCF) and VMware vSphere Foundation (VVF) primary software stack options. Licenses can be purchased through flexible term subscription-based models with 3-year or 5-year durations. In addition to the primary stack options, advanced service add-on options are available for features like vSAN additional capacity, Live Recovery, Firewall with Advanced Threat Prevention, Avi Load Balancer and Private AI Foundation.

Customers who have purchased VMware Licenses directly from Broadcom or an approved distributor have the flexibility to choose "Customer has VMware by Broadcom Software License" in their DCSC configuration.

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

- Primary Software

    1. VMware Cloud Foundation (VCF)
    2. VMware vSphere Foundation (VVF)

- Add-On Options (requires purchase of a Primary Software version)

    1. VMware vSAN (for capacity over TiB allocation from primary SKU)
    2. VMware Live Recovery
    3. VMware vDefend Firewall Bundle (requires VCF)
    4. VMware vDefend Firewall with Advanced Threat Prevention Bundle (requires VCF)
    5. VMware Avi Load Balancer
    6. VMware Private AI Foundation (requires VCF)

For details and ordering information, see the VMware Software Solution Product Guide:
https://lenovopress.com/lp1265-vmware-software-solution-product-guide

Configuration notes:

- VMware software licenses that are available for selection include 3-year, or 5-year software support (matches the duration of the selected solution-level warranty period).
- The quantity of processor core count-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.

For the VX 4U Certified Node for SAP HANA, HANA software licenses are purchased separately from SAP. Also, SUSE Linux Enterprise Server or Red Hat Enterprise Linux Server licenses are needed for deploying virtual machines for the SAP HANA virtualized environment. Optional Lenovo Professional Services are available to deploy SAP HANA software stack at the customer site.

Warranty and Support

The VX7820 and VX 4U Certified Nodes have a 3-year warranty based on the machine type:

- 7Z12 - 3 year warranty
- 7Z13 - 3 year warranty

The ThinkAgile VX Series Appliances can be configured with a three- or five-year hardware warranty, bundled with Premier Support that provides a 24x7 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.

Our global network of regional support centers offers consistent, local-language support enabling you to vary response times and level of service to match the criticality of your support needs:

- **Standard Next Business Day** – Best choice for non-essential systems requiring simple maintenance.
- **Premier Next Business Day** – Best choice for essential systems requiring technical expertise from senior-level Lenovo engineers.
- **Premier 24x7 4-Hour Response** – Best choice for systems where maximum uptime is critical.
- **Premier Enhanced Storage Support 24x7 4-Hour Response** – Best choice for storage systems where maximum uptime is critical.

For more information, consult the brochure Lenovo Operational Support Services for Data Centers Services .

Software maintenance

The ThinkAgile VX Series Integrated Systems (appliances) or Certified Nodes can include three-, or five-year software 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. Lenovo will contact the customer and will own the software-related problem resolution until closure.

For the VMware by Broadcom license purchased from Lenovo together with the ThinkAgile VX Series Certifed Nodes, 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. VMware by Broadcom will contact the customer and will own the software-related problem resolution until closure.

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)

ThinkAgile VX Integrated Systems include deployment services delivered by Lenovo Professional Services for the ultimate customer experience. However, "Channel Partner Provided" option is also available on DCSC. By choosing this option, Lenovo Customer or Lenovo Business Partner assumes the full responsibility to perform the deployment services for the quoted system. It is strongly recommended that Lenovo Professional Services or approved business partners are used to perform the deployment services.

The following additional Lenovo deployment services are available for the ThinkAgile VX Series with VMware vSphere Foundation solution to get customers up and running quickly. You can use the table below to add these services:

- 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 Lenovo deployment services are provided with the ThinkAgile VX Series with VMware Cloud Foundation co-engineered solution to get customers up and running quickly:

- Planning and Design
    - Collect technical details for hardware and VMware environment
    - Plan the architecture based on Customer's business and tech requirements
    - Fill the VCF Plan, Prepare Workbook

- Implementation
    - Configure hardware (XCC IP, UEFI), upgrade firmware via OneCLI or BoMC
    - Deploy & Configure ESXi, Cloud Builder & import VCF Workbook, Lenovo xClarity software components
    - Check compliance with VX Best Recipes

- Handover
    - BAU updates based on VCF releases and VX Best Recipes
    - VMware Async Patch Tool (if required)

- Readiness Handover
    - Create handover document and knowledge transfer
    - Includes details for each deployed component

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/

The SAP HANA onsite deployment that is provided by Lenovo Professional Services is optional for the ThinkAgile VX 4U Certified Node for SAP HANA.

Lenovo TruScale

Lenovo TruScale XaaS is your set of flexible IT services that makes everything easier. Streamline IT procurement, simplify infrastructure and device management, and pay only for what you use – so your business is free to grow and go anywhere.

Lenovo TruScale is the unified solution that gives you simplified access to:

- The industry's broadest portfolio – from pocket to cloud – all delivered as a service
- A single-contract framework for full visibility and accountability
- The global scale to rapidly and securely build teams from anywhere
- Flexible fixed and metered pay-as-you-go models with minimal upfront cost
- The growth-driving combination of hardware, software, infrastructure, and solutions – all from one single provider with one point of accountability.

For information about Lenovo TruScale offerings that are available in your region, contact your local Lenovo sales representative or business partner.

Regulatory compliance

The VX7820 and VX 4U Certified Nodes conform to the following standards:

- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 6, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 60950-1
- IEC 62368-1 2014(CB Certificate and CB Test Report)
- NOM-019
- Argentina IEC60950-1
- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 60950.1
- China CCC GB4943.1, GB9254 Class A, GB17625.1
- Taiwan BSMI CNS13438, Class A; CNS14336-1 CNS15663
- Korea KN32, Class A; KN35
- Russia, Belorussia and Kazakhstan, TR CU 020/2011 (for EMC) and TR CU 004/2011 (for safety)
- IEC 60950-1 (CB Certificate and CB Test Report)
- CE Mark (EN55032 Class A, EN60950-1, EN55024, EN61000-3-2, EN61000-3-3)
- CISPR 32, Class A
- TUV-GS (EN60950-1, IEC60950-1, EK1-ITB2000)
- RoHS Directive
- Energy Star 3.0
- ErP lot3
- JESL

Lenovo Financial Services

Why wait to obtain the technology you need now? No payments for 90 days and predictable, low monthly payments make it easy to budget for your Lenovo solution.

- **Flexible**

  Our in-depth knowledge of the products, services and various market segments allows us to offer greater flexibility in structures, documentation and end of lease options.

- **100% Solution Financing**

  Financing your entire solution including hardware, software, and services, ensures more predictability in your project planning with fixed, manageable payments and low monthly payments.

- **Device as a Service (DaaS)**

  Leverage latest technology to advance your business. Customized solutions aligned to your needs. Flexibility to add equipment to support growth. Protect your technology with Lenovo's Premier Support service.

- **24/7 Asset management**

  Manage your financed solutions with electronic access to your lease documents, payment histories, invoices and asset information.

- **Fair Market Value (FMV) and $1 Purchase Option Leases**

  Maximize your purchasing power with our lowest cost option. An FMV lease offers lower monthly payments than loans or lease-to-own financing. Think of an FMV lease as a rental. You have the flexibility at the end of the lease term to return the equipment, continue leasing it, or purchase it for the fair market value. In a $1 Out Purchase Option lease, you own the equipment. It is a good option when you are confident you will use the equipment for an extended period beyond the finance term. Both lease types have merits depending on your needs. We can help you determine which option will best meet your technological and budgetary goals.

Ask your Lenovo Financial Services representative about this promotion and how to submit a credit application. For the majority of credit applicants, we have enough information to deliver an instant decision and send a notification within minutes.

Seller training courses

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

1. **Unlock the full potential of AI in your organization with a private and secure solution that leverages your own data**
   2025-06-26 | 61 minutes | Employees and Partners

   Join Scott Stricker, World-Wide Leader for Advanced Services within the VMware Cloud Foundation Division and Alex Fanous Advanced Services Architects VMware Cloud Foundation Org at VMware by Broadcom as they lead us in this session. We'll explore the critical need for a private AI solution that enables enterprises to serve AI models with confidence, while maintaining control over their sensitive data and adhering to operational governance & standards. We'll discuss the benefits of a Lenovo-VMware joint solution, including robust lifecycle management, agility, and the ability to deliver AI outcomes that drive business success. We'll also delve into real-world use cases and identify the new personas within our customers' business that will be the consumers of these AI services, and how they can benefit from a private AI foundation. Join us for this technical deep dive into the solution, including a live demonstration, to see how you can harness the power of AI while protecting your organization's most valuable assets and wrangle the cost of today's most expensive workload.

   Tags: Artificial Intelligence (AI), Cloud, Software Defined Infrastruture (SDI), ThinkAgile

   Published: 2025-06-26
   Length: 61 minutes

   > **Start the training:**
   > Employee link: Grow@Lenovo
   > Partner link: Lenovo 360 Learning Center

   Course code: DVCLD224

2. **ThinkAgile VX in 3 minutes**
   2025-06-18 | 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

   Tags: Sales, Sales Tools, Technical Sales, ThinkAgile

   Published: 2025-06-18
   Length: 5 minutes

   > **Start the training:**
   > Employee link: Grow@Lenovo
   > Partner link: Lenovo 360 Learning Center

   Course code: DVXS101

3. **Lenovo Data Center Product Portfolio**
   2025-06-11 | 20 minutes | Employees and Partners

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

   Course objectives:
   1. Identify product types within each data center family
   2. Describe the features of the product family or category
   3. Recognize when a specific product should be selected

   Tags: Advanced DataCenter, DataCenter Products, Server, ThinkAgile, ThinkEdge, ThinkSystem

   Published: 2025-06-11
   Length: 20 minutes

   > **Start the training:**
   > Employee link: Grow@Lenovo
   > Partner link: Lenovo 360 Learning Center

   Course code: SXXW1110r8

4. **VTT: Nutanix Integration in XClarity One - SAM - May 2025**
   2025-06-10 | 56 minutes | Employees Only

   Please join this session as our speaker Sorin Tacu, will be sharing us a preview of SAM (Solutions Advanced Manager) - a powerful new tool developed by the ThinkAgile HX team in collaboration with XClarity One. Designed to seamlessly integrate the Nutanix Solution into XClarity One, SAM is set to streamline solution management and drive greater value for our customers. Get a first look at its future capabilities and learn more about it.

   Tags: Nutanix, XClarity

   Published: 2025-06-10
   Length: 56 minutes

   > **Start the training:**
   > Employee link: Grow@Lenovo

   Course code: DVSYS217

5. **Partner Technical Webinar - ThinkAgile V4**
2025-06-09 | 60 minutes | Employees and Partners

In this 60-minute replay, Pawan Misra, Lenovo SDI Product Manager and Adam Mandelbloom, Lenovo SDI Technical Marketing Manager, reviewed the newly announced ThinkAgile V4 systems for HX, VX and MX.

Tags: Microsoft, Nutanix, VMware

Published: 2025-06-09
Length: 60 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: JUN0625

6. **Family Portfolio: ThinkAgile Systems**
2025-04-30 | 45 minutes | Employees and Partners

This course covers the foundational components of the ThinkAgile family, including server configurations, key system differences, and the unique features of the HX, MX, and VX product families.
By the end of this course, you should be able to:
•List the ThinkSystem and ThinkEdge servers that the ThinkAgile family is based on
•Explain the difference between Certified Nodes and Integrated Systems
•List two features each of the HX, MX, and VX families

Tags: ThinkAgile, ThinkSystem

Published: 2025-04-30
Length: 45 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: SXSW2150r2

7. **Partner Technical Webinar - Storage Announcements**
2025-04-29 | 60 minutes | Employees and Partners

In this 60-minute replay, the April 23 Storage Announcement was presented. Adam Mandelbloom, Lenovo Technical Marketing Manager, presented the ThinkAgile announcements. Next, Roger Yarosh, Senior Storage Product Manager, presented the DG and DM announcements.

Tags: Data Management, ThinkAgile

Published: 2025-04-29
Length: 60 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: 042525

8. **Think AI Weekly: Simplifying AI Deployments with ThinkAgile**
2025-04-11 | 54 minutes | Employees Only

Please view this session to hear Adam Mandelbloom, Technical Marketing Manager for ISG explain these topics:

-Overall value proposition of ThinkAgile in AI solutions
-Use cases for ThinkAgile HX
-Use cases for ThinkAgile VX and MX

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2025-04-11
Length: 54 minutes

> **Start the training:**
> Employee link: Grow@Lenovo

Course code: DTAIW137

9. **ThinkAgile VX - How to sell**
2024-12-18 | 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.

Course Objectives:
1. Find out more about the competitive advantage of ThinkAgile VX.
2. Learn about the hardware and software solutions in the ThinkAgile VX line.
3. Understand the business needs and how you can sell more.

Tags: ThinkAgile, VMware

Published: 2024-12-18
Length: 15 minutes

> **Start the training:**
> Employee link: Grow@Lenovo
> Partner link: Lenovo 360 Learning Center

Course code: DVXS100

10. **Selling On Prem Value - Private Cloud and Private AI**
2024-12-13 | 40 minutes | Employees Only

This course provides Lenovo Sellers with a series of five videos that are designed to help you better articulate our joint value in the Private Cloud and Private AI solution opportunity. After completing this course, Lenovo Sellers should be prepared to elevate customer discussions by transitioning from product features to explaining value-driven benefits, enabling a deeper understanding of the strategic impact for their business.

Tags: Artificial Intelligence (AI), Industry solutions, Technology solutions, ThinkAgile, VMware

Published: 2024-12-13
Length: 40 minutes

> **Start the training:**
> Employee link: Grow@Lenovo

Course code: DVMB101

11. **Partner Technical Webinar - Data Center 101 - Why HCI? Why 3-tier?**
2024-11-14 | 60 minutes | Employees and Partners

October 11, 2024 – In this 60-minute webinar Alex Docherty, Channel Technical Strategist, discussed When to HCI vs 3 Tier.

Tags: ThinkAgile, ThinkSystem

Published: 2024-11-14
Length: 60 minutes

> **Start the training:**
> Employee link: Grow@Lenovo
> Partner link: Lenovo 360 Learning Center

Course code: 101124

12. **ThinkAgile Solutions for AI - Security and Compliance Considerations**
2024-10-01 | 15 minutes | Employees and Partners

This course, tailored specifically for Lenovo and its partner technical sellers, is designed to equip participants with essential knowledge and skills to effectively assess security measures and address compliance considerations for ThinkAgile Solutions for AI.

Upon completion of this training, you will be able to:
• Describee security features of ThinkAgile for AI data protection.
• Explain how to mitigate risk and address compliance considerations in AI deployments.

Last Updated: September 2024

Tags: Artificial Intelligence (AI), High-Performance Computing (HPC), ThinkAgile

Published: 2024-10-01
Length: 15 minutes

> **Start the training:**
> Employee link: Grow@Lenovo
> Partner link: Lenovo 360 Learning Center

Course code: DCLDAI203

13. **Integration of ThinkAgile and AI**
    2024-09-11 | 25 minutes | Employees and Partners

    Designed specifically for Lenovo and its partner technical sellers, this course aims to equip you with the knowledge and skills to effectively communicate the integration of ThinkAgile Solutions and AI.

    Upon completion of this training, you will be able to:
    •Highlight the advantages of using ThinkAgile for AI workloads
    •Explore how ThinkAgile platforms are specifically optimized for AI

    Last Updated: September 2024

    Tags: Artificial Intelligence (AI), ThinkAgile

    Published: 2024-09-11
    Length: 25 minutes

    Start the training:
    Employee link: Grow@Lenovo
    Partner link: Lenovo 360 Learning Center

    Course code: DCLDAI204

14. **Key Features of Lenovo ThinkAgile Solutions for AI**
    2024-09-10 | 15 minutes | Employees and Partners

    Designed specifically for Lenovo and its partner technical sellers, this course aims to equip you with the knowledge and skills to effectively communicate the key features of ThinkAgile Solutions for AI. By completing this course, you'll be better prepared to understand customer needs and present the most suitable AI solutions, ensuring successful engagements and driving value for your clients.

    In this course, you will learn how to:
    • Present compute capabilities for AI processing
    • Articulate optimized storage solutions with ThinkAgile for high-speed AI performance
    • Identify essential networking considerations for ThinkAgile AI workloads
    • Present ThinkAgile AI Ready solutions

    Last Updated: September 2024

    Tags: Artificial Intelligence (AI), ThinkAgile

    Published: 2024-09-10
    Length: 15 minutes

    Start the training:
    Employee link: Grow@Lenovo
    Partner link: Lenovo 360 Learning Center

    Course code: DCLDAI201

15. **ThinkAgile Solutions for AI - Sales Strategies and Messaging**
2024-09-06 | 15 minutes | Employees and Partners

This course is designed exclusively for Lenovo and its partner technical sales teams, with the goal of empowering you with the knowledge and strategies necessary to effectively engage customers in conversations about ThinkAgile Solutions for AI.

In this course, you'll learn how to:
• Identify customer pain points.
• Recommend ThinkAgile Solutions for AI tailored to those needs. And lastly,
• Communicate the benefits of ThinkAgile for AI to key stakeholders.

Last Updated: September 2024

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2024-09-06
Length: 15 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: DCLDAI202

16. **Position Lenovo ThinkAgile Solutions for AI**
2024-08-19 | 10 minutes | Employees and Partners

Designed specifically for Lenovo and partner technical sellers, this course aims to equip you with the knowledge and skills necessary to effectively evaluate and position ThinkAgile Solutions for AI to your customers. By completing this course, you will be better prepared to understand customer needs and present the most suitable AI solutions, ensuring successful engagements and driving value for your clients.

In this course, you will learn how to position ThinkAgile Solutions for AI to your customers by:
•Evaluating the key challenges in the enterprise landscape
•Advocating the value proposition of ThinkAgile Hyper-Converged Infrastructure
•Exploring use cases of ThinkAgile in AI environments
•Implementing ThinkAgile-based AI deployments

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2024-08-19
Length: 10 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: DCLDAI200

17. **Lenovo VTT Cloud Architecture - Unlock Gen AI with VMware Private AI Foundation with NVIDIA**
2024-07-16 | 60 minutes | Employees Only

In today's rapidly evolving digital landscape, businesses are hungry for the transformative power of Artificial Intelligence (AI). They see AI as the key to streamlining operations and unlocking exciting new opportunities. However, widespread adoption has been hampered by concerns surrounding privacy, the complexity of implementation, and the hefty costs associated with deploying and managing AI solutions at an enterprise level.
Join Chris Gully and Baker Hull, Solutions Architects from VMware by Broadcom, as they discuss how Lenovo, NVIDIA, and VMware By Broadcom are partnering to deliver a private, secure, scalable, and flexible AI infrastructure solution that helps enterprise customers build and deploy AI workloads within their own private cloud infrastructure, ensure the control of sensitive data and compliance with regulatory requirements, ultimately driving faster time to value and achieving their AI objectives.

Tags: Artificial Intelligence (AI), Cloud, Nvidia, ThinkAgile, VMware

Published: 2024-07-16
Length: 60 minutes

> **Start the training:**
> Employee link: Grow@Lenovo

Course code: DVCLD214

18. **ThinkAgile Roadshow for Account Managers**
2024-06-21 | 60 minutes | Employees Only

As customers transition through technology refresh and modernize their IT, learn how to win and position ThinkAgile portfolio. Get an overview of current ThinkAgile momentum and strategy along with best practices in product positioning

Tags: Artificial Intelligence (AI), Cloud, Microsoft, Nutanix, ThinkAgile, VMware

Published: 2024-06-21
Length: 60 minutes

> **Start the training:**
> Employee link: Grow@Lenovo

Course code: DTAO101

19. **VTT Cloud Architecture - What next with VMware Discussion**
2024-06-13 | 60 minutes | Employees Only

Broadcom's acquisition of VMware has stirred significant interest and concern among customers who rely on VMware for their cloud and on-premises infrastructure needs. This acquisition may prompt customers to explore alternative platforms due to potential changes in service quality, pricing, and product roadmaps. Join John Encizo, Lenovo Field CTO & Principal Technical Consultant for an in-depth look at what it takes to migrate customers to different platforms and considerations for whether they should make the move.

Tags: Cloud, Microsoft, Nutanix, Technical Sales, VMware

Published: 2024-06-13
Length: 60 minutes

Start the training:
Employee link: Grow@Lenovo

Course code: DVCLD213

20. **SAP Webinar for Lenovo Sellers: Lenovo Portfolio Update for SAP Landscapes**
2024-06-04 | 60 minutes | Employees Only

Join Mark Kelly, Advisory IT Architect with the Lenovo Global SAP Center of Competence as he discusses:
•Challenges in the SAP environment
•Lenovo On-premise Solutions for SAP
•Lenovo support resources for SAP solutions

Tags: SAP, ThinkAgile, ThinkEdge, ThinkSystem

Published: 2024-06-04
Length: 60 minutes

Start the training:
Employee link: Grow@Lenovo

Course code: DSAPF101

21. **VTT Cloud Architecture: NVIDIA Using Cloud for GPUs and AI**
2024-05-22 | 60 minutes | Employees Only

Join JD Dupont, NVIDIA Head of Americas Sales, Lenovo partnership and Veer Mehta, NVIDIA Solution Architect on an interactive discussion about cloud to edge, designing cloud Solutions with NVIDIA GPUs and minimizing private\hybrid cloud OPEX with GPUs. Discover how you can use what is done at big public cloud providers for your customers. We will also walk through use cases and see a demo you can use to help your customers.

Tags: Artificial Intelligence (AI), Cloud, Nvidia, Software Defined Infrastruture (SDI), Technical Sales

Published: 2024-05-22
Length: 60 minutes

Start the training:
Employee link: Grow@Lenovo

Course code: DVCLD212

22. **Start the Conversation - Lenovo Cloud Strategy**
2024-05-20 | 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.

Course Objectives:
•Understand why customers choose the cloud
•Describe the Lenovo Cloud Strategy
•Be able to start the customer cloud conversation

Tags: Cloud, Technology solutions

Published: 2024-05-20
Length: 25 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: DCLDS103r3

23. **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.

Tags: Cloud, Services, Sustainability, Technology solutions, TruScale Infrastructure as a Service

Published: 2024-04-10
Length: 50 minutes

Start the training:
Employee link: Grow@Lenovo

Course code: DVCLD211

24. **VTT Data Management How to sell storage - April 2024**
    2024-04-10 | 60 minutes | Employees and Partners

    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?

    Tags: Data Management, Storage

    Published: 2024-04-10
    Length: 60 minutes

    > **Start the training:**
    > Employee link: Grow@Lenovo
    > Partner link: Lenovo 360 Learning Center

    Course code: DVDAT209

25. **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

    Tags: Architecture, Engineering & Construction, Cloud, Technical Sales, ThinkAgile

    Published: 2024-03-07
    Length: 35 minutes

    > **Start the training:**
    > Employee link: Grow@Lenovo
    > Partner link: Lenovo 360 Learning Center

    Course code: DCLDT2001r3

26. **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

Tags: Sales, Storage

Published: 2024-01-25
Length: 15 minutes

> **Start the training:**
> Employee link: Grow@Lenovo
> Partner link: Lenovo 360 Learning Center

Course code: SXSW1101r2

27. **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.

Tags: Cloud, Technology solutions, ThinkAgile, ThinkEdge, ThinkSystem

Published: 2024-01-03
Length: 30 minutes

> **Start the training:**
> Employee link: Grow@Lenovo
> Partner link: Lenovo 360 Learning Center

Course code: DCLDO112r2

28. **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.

Tags: Cloud, Software Defined Infrastruture (SDI), Technology solutions, ThinkAgile, VMware

Published: 2023-10-11
Length: 54 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: DVCLD205

29. **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.

Tags: Sales

Published: 2023-09-27
Length: 20 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: DSTOO100

30. **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.

    Tags: Cloud, Software Defined Infrastruture (SDI), Technical Sales, VMware

    Published: 2023-09-12
    Length: 35 minutes

    Start the training:
    Employee link: Grow@Lenovo

    Course code: DVCLD204

31. **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.

    Tags: Cloud, Infrastructure as a Service (IaaS), ThinkAgile, VMware

    Published: 2023-08-17
    Length: 60 minutes

    Start the training:
    Employee link: Grow@Lenovo

    Course code: DVCLD203

32. **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.

Tags: ThinkAgile

Published: 2023-07-28
Length: 50 minutes

Start the training:
Employee link: Grow@Lenovo
Partner link: Lenovo 360 Learning Center

Course code: DVXT201

33. **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

Tags: Data Management, SAP, ThinkAgile, ThinkEdge, ThinkSystem

Published: 2023-07-14
Length: 60 minutes

Start the training:
Employee link: Grow@Lenovo

Course code: DVDAT202

34. **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

Tags: Cloud, ThinkAgile

Published: 2023-07-12
Length: 60 minutes

> **Start the training:**
> Employee link: Grow@Lenovo
> Partner link: Lenovo 360 Learning Center

Course code: DVXSV104

35. **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.

Tags: Cloud, Software Defined Infrastruture (SDI), ThinkAgile, VMware

Published: 2023-07-12
Length: 90 minutes

> **Start the training:**
> Employee link: Grow@Lenovo

Course code: DVCLD202

36. **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

    Tags: Cloud

    Published: 2023-07-11
    Length: 40 minutes

    > **Start the training:**
    > Employee link: Grow@Lenovo
    > Partner link: Lenovo 360 Learning Center

    Course code: DCLDS104r2

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 SR950 product guide:
  https://lenovopress.com/lp1054-thinksystem-sr950-server-xeon-sp-gen-2
- Interactive 3D Tour of the ThinkSystem SR950:
  https://lenovopress.com/lp0674-3d-tour-thinksystem-sr950
- Lenovo Press video walk-through of the ThinkSystem SR950:
  https://lenovopress.com/lp0702-thinksystem-sr950-server-video-walkthrough

Related product families

Product families related to this document are the following:

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

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