Lenovo ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U, VX 2U HANA Certified Nodes (Intel Xeon SP Gen 2)
Product Guide

The Lenovo ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U Certified Nodes are 2-socket 2U systems that feature the 2nd Generation Intel Xeon Scalable processors (formerly "Cascade Lake"). These systems are based on the ThinkSystem SR650 with up to 28 cores per processor, up to 3 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 2U systems are available either as an appliance or certified node:

- VX3520-G Appliance for compute-heavy workloads including those benefiting from the use of GPUs
- VX5520 Appliance for storage-heavy workloads
- VX7520 Appliance for high performance workloads
- VX 2U Certified Node
- VX 2U Certified Node for SAP HANA - certified by SAP for deploying SAP HANA solutions on hyperconverged infrastructure (HCI) in production environments.

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

Figure 1. Lenovo ThinkAgile VX with 16x 2.5-inch drive bays

Did you know?

The ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U Certified Nodes are built on the Lenovo ThinkSystem SR650 server that features enterprise-class reliability, management, and security.

The VX3520-G, VX5520 and VX7520 Appliances offer ThinkAgile Advantage Single Point of Support for quick 24/7 problem reporting and resolution.

Key features

The ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U 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 vSAN with "one stop shop" and a single point of contact provided by Lenovo for purchasing, deploying, and supporting the solution.

- Meet various workload demands with cost-efficient hybrid or performance-optimized all-flash storage configurations.

- Deliver fully validated and integrated hardware and firmware that is certified with VMware software.

- Appliances include Lenovo ThinkAgile Advantage Single Point of Support for quick 24/7 problem reporting and resolution.

- The VX 2U Certified Node for SAP HANA is Certified by SAP to run SAP HANA in production on hyperconverged infrastructure.

- Offer Lenovo deployment services to get customers up and running quickly.

The VMware software running on ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U 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.

Components and connectors

The ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U Certified Nodes are based on the ThinkSystem SR650 server.

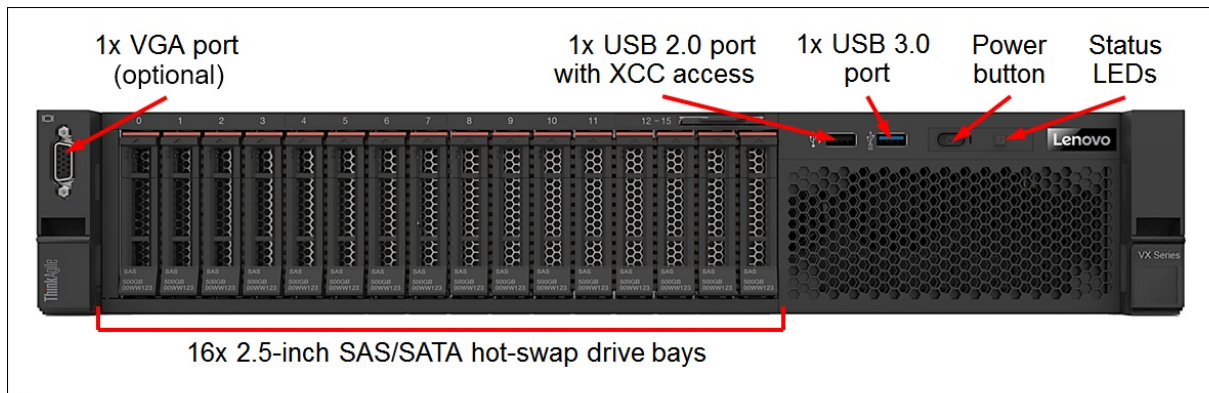The following figure shows the front view of the VX3520-G appliance.

Figure 2. VX3520-G front view

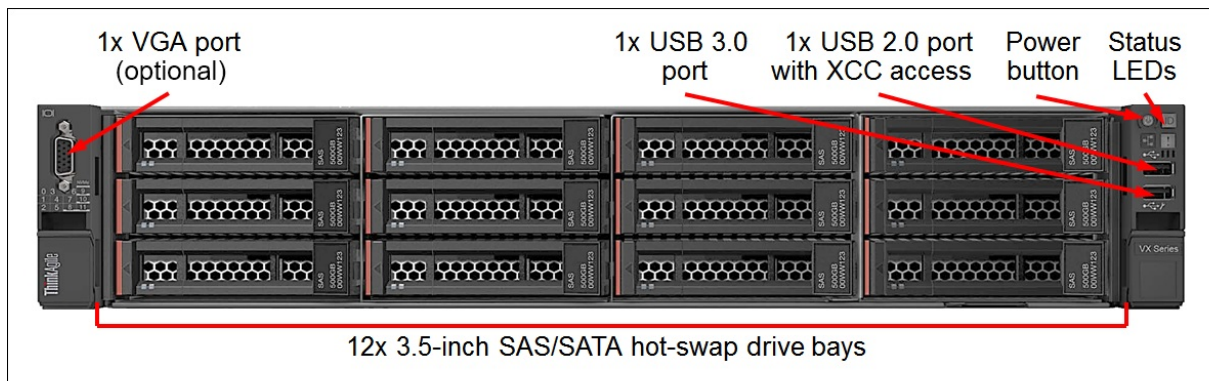The following figure shows the front view of the VX5520 appliance.

Figure 3. VX5520 front view

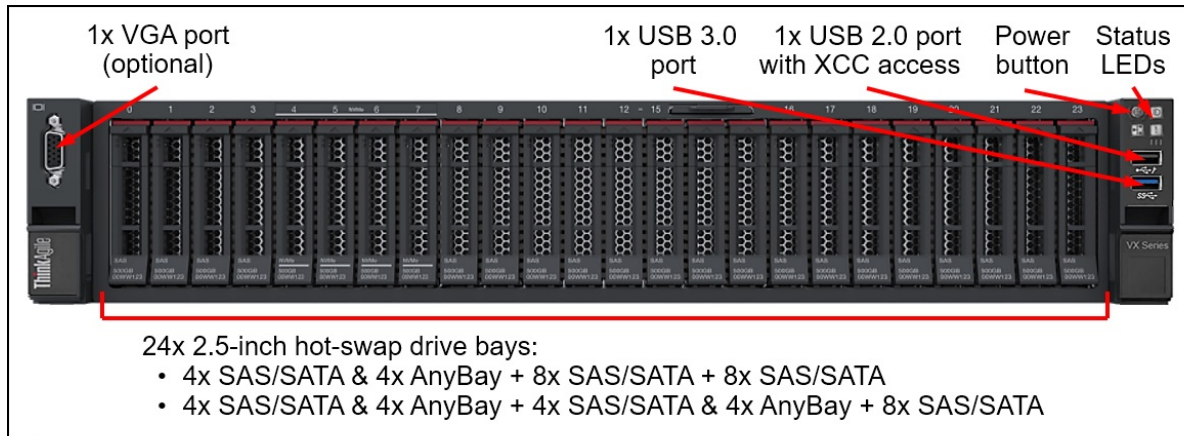The following figure shows the front view of the VX7520 appliance.

1x VGA port (optional)　　　1x USB 3.0 port　　1x USB 2.0 port with XCC access　　Power button　　Status LEDs

24x 2.5-inch hot-swap drive bays:
- 4x SAS/SATA & 4x AnyBay + 8x SAS/SATA + 8x SAS/SATA
- 4x SAS/SATA & 4x AnyBay + 4x SAS/SATA & 4x AnyBay + 8x SAS/SATA

Figure 4. VX7520 front view

The following figure shows the front view of the VX 2U Certified Nodes with 16 SFF drive bays.

1x VGA port (optional)　　　1x USB 2.0 port with XCC access　　1x USB 3.0 port　　Power button　　Status LEDs

Up to 16x 2.5-inch hot-swap drive bays:
- 8x SAS/SATA + 8x SAS/SATA
- 4x SAS/SATA & 4x AnyBay + 8x SAS/SATA
- 4x SAS/SATA & 4x AnyBay + 4x SAS/SATA & 4x AnyBay
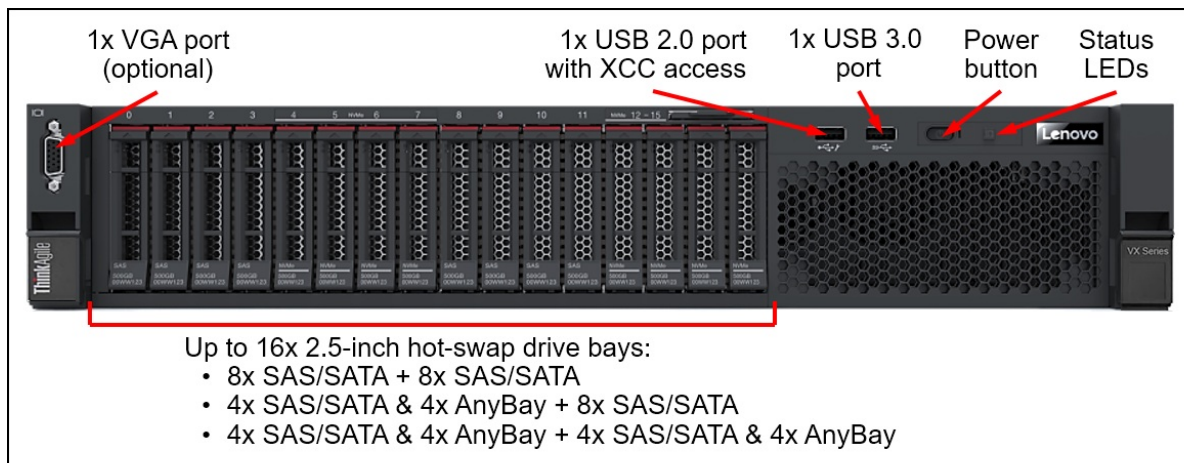
Figure 5. VX 2U Certified Nodes front view: 16x SFF drive bays

The following figure shows the front view of the VX 2U Certified Nodes with 24 SFF drive bays.

1x VGA port (optional)　　　1x USB 3.0 port　　1x USB 2.0 port with XCC access　　Power button　　Status LEDs

Up to 24x 2.5-inch hot-swap drive bays:
- 8x SAS/SATA + 8x SAS/SATA + 8x SAS/SATA
- 4x SAS/SATA & 4x AnyBay + 8x SAS/SATA + 8x SAS/SATA
- 4x SAS/SATA & 4x AnyBay + 4x SAS/SATA & 4x AnyBay + 8x SAS/SATA
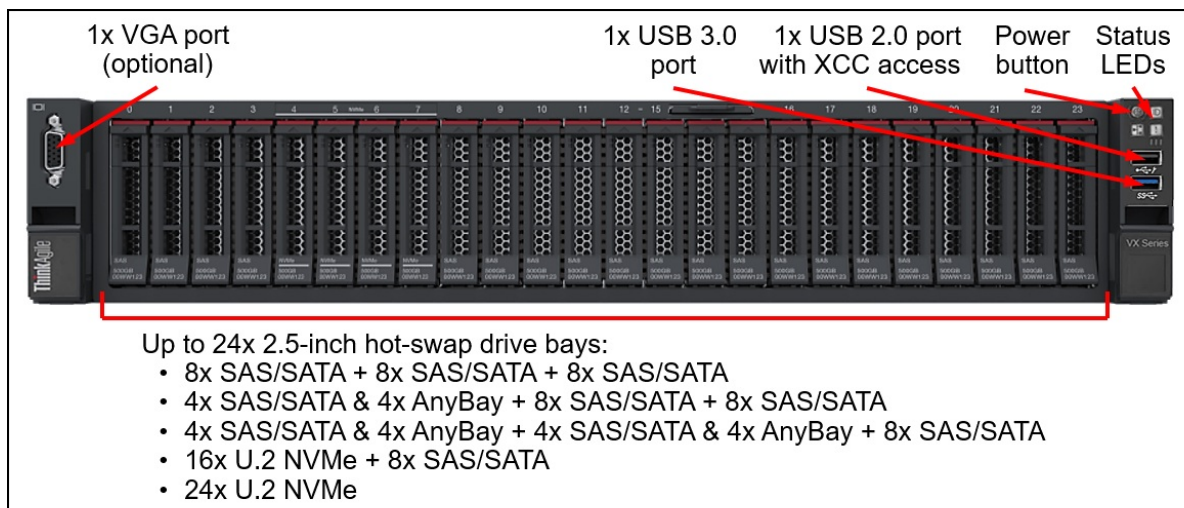- 16x U.2 NVMe + 8x SAS/SATA
- 24x U.2 NVMe

Figure 6. VX 2U Certified Nodes front view: 24x SFF drive bays

The following figure shows the rear view of the VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes with up to 6 slots.

1x 10/100/1000 Mb Ethernet port for XCC (RJ-45)

Up to 6x PCIe 3.0 slots

LOM card:
- 2x or 4x 10 GbE SFP+
- 2x or 4x 10 GbE RJ-45

1x VGA port

2x USB 3.0 ports

2x Hot-swap power supplies (IEC 320-C14)
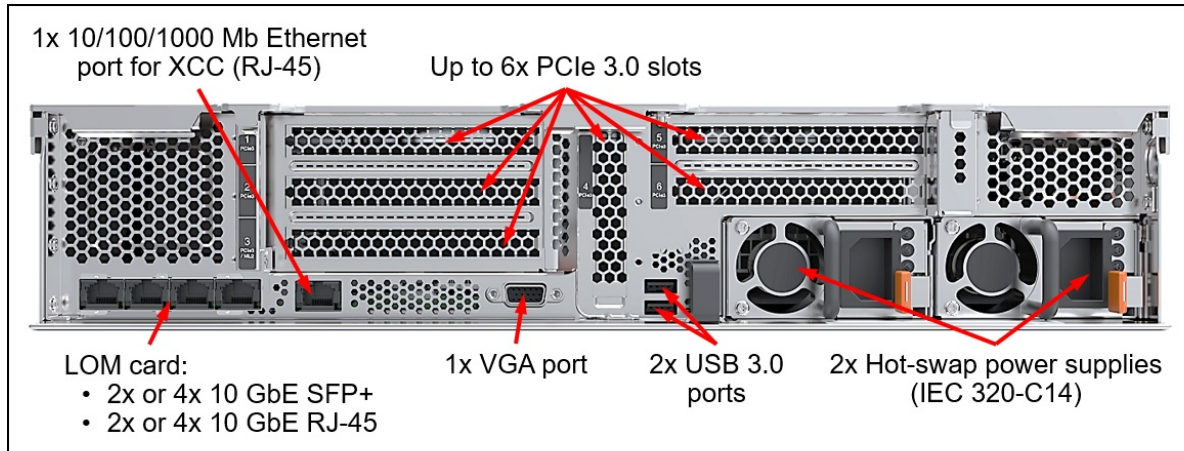
Figure 7. VX systems rear view without rear drive bays

The following figure shows the rear view of the VX5520 Appliance and VX 2U Certified Node, with rear drive bays and up to 3 slots.

1x 10/100/1000 Mb Ethernet port for XCC (RJ-45)

2x 3.5-inch SAS/SATA hot-swap drive bays

Up to 3x PCIe 3.0 slots

LOM card:
- 2x or 4x 10 GbE SFP+
- 2x or 4x 10 GbE RJ-45

1x VGA port

2x USB 3.0 ports

2x Hot-swap power supplies (IEC 320-C14)

Figure 8. VX5520 rear view with rear drive bays

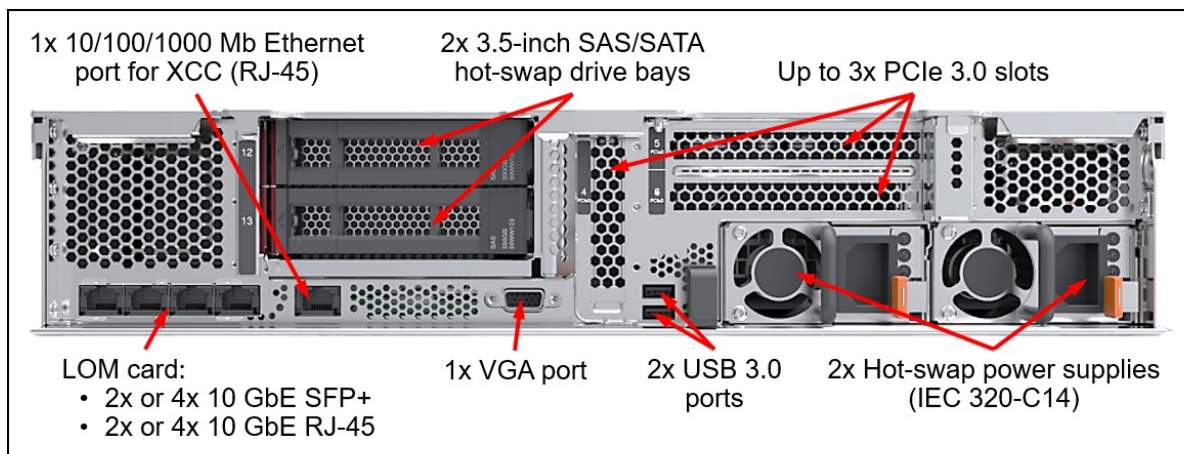## Standard specifications

The ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U Certified Nodes are based on the ThinkSystem SR650 server.

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

Table 1. Comparison of features

	VX3520-G	VX5520	VX7520	VX 2U	VX 2U for HANA
VX offering type	Appliance	Appliance	Appliance	Certified Node	Certified Node
Target workloads	Compute heavy	Storage heavy	High performance	High performance	SAP HANA
Base MTM	7Y94CTO3WW	7Y94CTO1WW	7Y94CTO2WW	7Y94CTO5WW	7Y94CTO6WW
Form Factor	2U	2U	2U	2U	2U
Base platform	SR650	SR650	SR650	SR650	SR650
CPU	2x Intel Xeon SP Gen 2	1x or 2x Intel Xeon SP Gen 2	2x Intel Xeon SP Gen 2	1x or 2x Intel Xeon SP Gen 2	2x Intel Xeon SP Gen 2
Memory	24x DDR4 2933 MHz (3TB max)	24x DDR4 2933 MHz (3TB max)	24x DDR4 2933 MHz (3TB max)	24x DDR4 2933 MHz (3TB max)	24x DDR4 2933 MHz (3TB max)
Hot-swap drive bays	• 16x 2.5" SAS/SATA (all front accessible)	• 12x 3.5" SAS/SATA (front) • 14x 3.5" SAS/SATA (12 front, 2 rear)	• 20x 2.5" SAS/SATA + 4x 2.5" AnyBay (all front) • 16x 2.5" SAS/SATA + 8x 2.5" AnyBay (all front)	• Up to 24x 2.5" SAS/SATA/NVMe (front) + 2x 3.5" (rear) • Up to 14x 3.5" SATA/SATA (12 front, 2 rear)	• Up to 24x 2.5" SAS/SATA/NVMe (all front)
Drive Configuration	All Flash Hybrid	Hybrid	All Flash Hybrid	All Flash Hybrid	All Flash
Disk Groups	1 - 4	1 - 2	1 - 4	1 - 4	2 - 4
HBA	430-16i HBA	430-16i HBA	430-8i HBA 430-16i HBA NVMe switch adapters	430-8i HBA 430-16i HBA NVMe switch adapters	430-8i HBA 430-16i HBA NVMe switch adapters
Boot drives	2x M.2 SATA	2x M.2 SATA	2x M.2 SATA	2x M.2 SATA	2x M.2 SATA
LOM networking	1x LOM adapter, 10Gb	1x LOM adapter, 10Gb	1x LOM adapter, 10Gb	1x LOM adapter, 1Gb or 10Gb	1x LOM adapter, 1Gb or 10Gb
PCIe networking	Up to 6x adapters 10Gb, 25Gb, 40Gb, 100Gb	Up to 6x adapters 1Gb, 10Gb, 25Gb, 40Gb, 100Gb	Up to 6x adapters 10Gb, 25Gb, 40Gb, 100Gb	Up to 6x adapters 1Gb, 10Gb, 25Gb, 40Gb, 100Gb	Up to 6x adapters 1Gb, 10Gb, 25Gb, 40Gb, 100Gb
GPUs	2x DW GPU 5x SW GPU	No support	No support	2x DW GPU 5x SW GPU	No support
Hypervisor	VMware ESXi	VMware ESXi	VMware ESXi	VMware ESXi	VMware ESXi

The following table lists the system specifications of the ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U Certified Nodes.

Table 2. System specifications - ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U Certified Nodes

Attribute	Specification
Machine types	7Y94 - 3 year warranty
Form factor	2U rack-mount
Processor	One or two 2nd Gen Intel Xeon Scalable processors (formerly codenamed "Cascade Lake")
Chipset	Intel C624 chipset, part of the platform codenamed "Purley"
Memory	24 DIMM slots (up to 12 DIMMs per processor; six memory channels per processor with two DIMMs per channel) with support for RDIMMs and 3DS RDIMM at up to 2933 MHz.
Persistent memory	VX 2U Certified Nodes support up to 12x TruDDR4 2666 MHz DCPMMs in the DIMM slots.
Memory capacity	Up to 3 TB with 128 GB 3DS RDIMMs and two processors. Memory DIMMs and persistent memory modules (Memory Mode): Up to 6 TB with 12x 512 GB DCPMMs (Up to 3 TB per processor). **Note:** Systems with more than 1 TB of memory capacity per socket require processors with an L suffix.
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, requires Intel Xeon Gold or Platinum processors), patrol scrubbing, and demand scrubbing.

Attribute	Specification

Hot-swap drive bays	• VX3520-G: 16x 2.5" SAS/SATA (front)
	
	• VX5520:
	    ○ 12x 3.5" SAS/SATA (front)
	    ○ 14x 3.5" SAS/SATA (12 front, 2 rear)
	
	• VX7520:
	    ○ 20x 2.5" SAS/SATA + 4x 2.5" AnyBay (front)
	    ○ 16x 2.5" SAS/SATA + 8x 2.5" AnyBay (front)
	    ○ 24x 2.5" NVMe (front)
	
	• VX 2U Certified Node:
	    ○ Up to 16x 2.5" and 2x 3.5" drive bays:
	        ■ 16x 2.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
	        ■ 12x 2.5" SAS/SATA & 4x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
	        ■ 8x 2.5" SAS/SATA & 8x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
	    ○ Up to 24x 2.5" and 2x 3.5" drive bays:
	        ■ 24x 2.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
	        ■ 20x 2.5" SAS/SATA & 4x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
	        ■ 16x 2.5" SAS/SATA & 8x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
	        ■ 16x 2.5" NVMe & 8x 2.5" SAS/SATA (front)
	        ■ 24x 2.5" NVMe (front)
	    ○ Up to 14x 3.5" drive bays:
	        ■ 12x 3.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
	        ■ 8x 3.5" SAS/SATA & 4x 3.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
	
	• VX 2U Certified Node for SAP HANA:
	    ○ Up to 16x 2.5" drive bays:
	        ■ 16x 2.5" SAS/SATA (front)
	        ■ 12x 2.5" SAS/SATA & 4x 2.5" AnyBay (front)
	        ■ 8x 2.5" SAS/SATA & 8x 2.5" AnyBay (front)
	    ○ Up to 24x 2.5" drive bays:
	        ■ 24x 2.5" SAS/SATA (front)
	        ■ 20x 2.5" SAS/SATA & 4x 2.5" AnyBay (front)
	        ■ 16x 2.5" SAS/SATA & 8x 2.5" AnyBay (front)
	        ■ 16x 2.5" NVMe + 8x 2.5" SAS/SATA
	        ■ 24x 2.5" NVMe

Internal storage	• 1 drive group: 1 cache drive + 2-7 capacity drives. • 2 drive groups: 1 cache drive + 2-6 capacity drives in each group. • 3 drive groups: 1 cache drive + 2-3 capacity drives in each group. • 4 drive groups: 1 cache drive + 2 capacity drives in each group. **Note:** The quantity of the capacity drives in each drive group must be the same.

Storage controller	• 12 Gbps SAS/6 Gbps SATA non-RAID:
	    ○ 430-8i HBA
	    ○ 430-16i HBA
	
	• NVMe PCIe non-RAID (VX7520 and VX 2U Certified Nodes)
	    ○ Onboard NVMe
	    ○ 810-4P NVMe Switch Adapter
	    ○ 1610-4P NVMe Switch Adapter
	    ○ 1610-8P NVMe Switch Adapter

Network interfaces	Onboard LOM slot for an adapter with up to 4x 1Gb or 10 Gb Ethernet ports Additional network adapters in PCIe slots
GPU adapters	VX3520-G supports up to 3x double-wide GPUs or up to 5x single-wide GPUs
Boot drive	2x M.2 non-hot-swap SSDs (RAID-1).

Attribute	Specification
I/O expansion slots	Up to seven slots. Slots 4 and 7 are the fixed slots on the system planar, and the remaining slots depend on the riser cards installed. The slots are as follows: • Slot 1: PCIe 3.0 x16 or PCIe 3.0 x8; full-height, half-length (PCIe x16 slot is double-wide) • Slot 2: PCIe 3.0 x8; full-height, half-length (not present if the slot 1 is PCIe x16) • Slot 3: PCIe 3.0 x8 or ML2; full-height, half-length • Slot 4: PCIe 3.0 x8; low profile (vertical slot on system planar) • Slot 5: PCIe 3.0 x16; full-height, half-length • Slot 6: PCIe 3.0 x16; full-height, half-length • Slot 7: PCIe 3.0 x8 (dedicated to an internal RAID controller) Slots 5 and 6 require the second processor to be installed.
Ports	• Front: 1x USB 2.0 port with XClarity Controller access, 1x USB 3.0 port, 1x VGA port (optional) • Rear: 2x USB 3.0 ports, 1x VGA port, 1x RJ-45 10/100/1000 Mb Ethernet port for systems management.
Cooling	Five (one processor) or six (two processors) hot-swap system fans with N+1 redundancy.
Power supply	One or two redundant hot-swap 1100 W (100 - 240 V) or 1600 W (200 - 240 V) High Efficiency Platinum power supplies.
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, HDDs, power supplies, and fans.
Systems management	Lenovo XClarity Controller (XCC) Enterprise (Pilot 4 chip), proactive platform alerts, light path diagnostics, Lenovo XClarity Administrator with Integrator for VMware vCenter, 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). Optional lockable front bezel.
Software	Software licenses that can be purchased from Lenovo or provided by the customer: • VMware vSAN: Standard, Advanced, Enterprise, Enterprise Plus, ROBO or Desktop • VMware vSphere: Standard, Enterprise Plus or ROBO • HCI Kit: Essentials, Standard, Advanced, Enterprise or ROBO • VMware Horizon: Standard, Advanced or Enterprise • VMware Cloud Foundation (VCF): Basic, Standard, Advanced, Enterprise or for VDI • VMware vCenter Server: Foundation or Standard
Hypervisors	VMware ESXi. See Operating system support section for details.
Warranty and support	Three- or five-year customer-replaceable unit and onsite limited hardware warranty with ThinkAgile Advantage Support and selectable service levels: 9x5 next business day (NBD) parts delivered, 9x5 NBD onsite response, 24x7 coverage with 2-hour or 4-hour onsite response, or 6-hour or 24-hour committed repair (select areas). Also available are YourDrive YourData, Premier Support, and Enterprise Software Support.
Software maintenance	One- (PRC only), three-, or five-year software support and subscription (matches the duration of the selected warranty period).
Dimensions	Width: 445 mm (17.5 in.), height: 87 mm (3.4 in.), depth: 764 mm (30.1 in.)
Weight	Maximum configuration: 32 kg (70.5 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.

Table 3. CTO base models

Machine Type/Model	Description
7Y94CTO3WW	ThinkAgile VX3520-G Appliance
7Y94CTO1WW	ThinkAgile VX5520 Appliance
7Y94CTO2WW	ThinkAgile VX7520 Appliance
7Y94CTO5WW	ThinkAgile VX 2U Certified Node
7Y94CTO6WW	ThinkAgile VX 2U Certified Node for SAP HANA

Models of the VX systems are defined based on whether the systems have 16x 2.5-inch, 24x 2.5-inch or 12x 3.5-inch drive bays at the front. For models, the feature codes for these chassis bases are as listed in the following table.

Table 4. Chassis base feature codes

Feature	Description	VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
		Maximum supported				
B1DF	ThinkAgile VX 2U 2.5" 8/16 Bay Chassis	1	No	No	1	1
B1DH	ThinkAgile VX 2U 2.5" 8/16/24 Bay Chassis	No	No	1	1	1
B1DG	ThinkAgile VX 2U 3.5" 8/12 Bay Chassis	No	1	No	1	No

Comparison with the ThinkSystem SR650

The ThinkAgile VX3520-G, VX5520, VX7520 2U Appliances and VX 2U Certified Nodes are based on the ThinkSystem SR650 server, however there are key differences:

- No onboard SATA controller support
- No RAID adapter support
- No VROC RAID support
- No SATA HDDs
- 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 4 disk groups)

For details about the ThinkSystem SR650, see the SR650 product guide: https://lenovopress.com/lp1050-thinksystem-sr650-server

To verify what specific hardware components are supported with the VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes, see the DCSC configurator: https://dcsc.lenovo.com

Processors

The VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes systems support the following processors.

For details about these options, including configuration rules, see the SR650 product guide: https://lenovopress.com/lp1050-thinksystem-sr650-server#processors

Table 5. Processor choices

Part number	Feature	Description	VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
			Maximum supported
Intel Xeon Bronze processors							
4XG7A37938	B4HU	Intel Xeon Bronze 3204 6C 85W 1.9GHz Processor	2	2	2	2	2
4XG7A37983	B7N3	Intel Xeon Bronze 3206R 8C 85W 1.9GHz Processor	2	2	2	2	2
Intel Xeon Silver processors							
4XG7A37935	B4HT	Intel Xeon Silver 4208 8C 85W 2.1GHz Processor	2	2	2	2	2
4XG7A37932	B4HS	Intel Xeon Silver 4210 10C 85W 2.2GHz Processor	2	2	2	2	2
4XG7A37981	B7N5	Intel Xeon Silver 4210R 10C 100W 2.4GHz Processor	2	2	2	2	2
4XG7A63276	BAZT	Intel Xeon Silver 4210T 10C 95W 2.3GHz Processor	2	2	2	2	2
4XG7A37929	B4HR	Intel Xeon Silver 4214 12C 85W 2.2GHz Processor	2	2	2	2	2
4XG7A37980	B7N6	Intel Xeon Silver 4214R 12C 100W 2.4GHz Processor	2	2	2	2	2
4XG7A37941	B4NW	Intel Xeon Silver 4214Y 12/10/8C 85W 2.2GHz Processor	2	2	2	2	2
4XG7A37926	B4HQ	Intel Xeon Silver 4215 8C 85W 2.5GHz Processor	2	2	2	2	2

Part number	Feature	Description	Maximum supported				
			VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
4XG7A63274	BAZU	Intel Xeon Silver 4215R 8C 130W 3.2GHz Processor	2	2	2	2	2
4XG7A37923	B4HP	Intel Xeon Silver 4216 16C 100W 2.1GHz Processor	2	2	2	2	2
Intel Xeon Gold processors							
4XG7A37916	B4HN	Intel Xeon Gold 5215 10C 85W 2.5GHz Processor	2	2	2	2	2
4XG7A37910	B4P9	Intel Xeon Gold 5215L 10C 85W 2.5GHz Processor	2	2	2	2	2
4XG7A37919	B4HM	Intel Xeon Gold 5217 8C 115W 3.0GHz Processor	2	2	2	2	2
4XG7A37895	B4HL	Intel Xeon Gold 5218 16C 125W 2.3GHz Processor	2	2	2	2	2
4XG7A37958	B6BS	Intel Xeon Gold 5218B 16C 125W 2.3GHz Processor	2	2	2	2	2
4XG7A63272	BAZS	Intel Xeon Gold 5218R 20C 125W 2.1GHz Processor	2	2	2	2	2
4XG7A38016	B4P3	Intel Xeon Gold 5218T 16C 105W 2.1GHz Processor	2	2	2	2	2
4XG7A37892	B4HK	Intel Xeon Gold 5220 18C 125W 2.2GHz Processor	2	2	2	2	2
4XG7A37974	B7N9	Intel Xeon Gold 5220R 24C 150W 2.2GHz Processor	2	2	2	2	2
4XG7A38019	B6CW	Intel Xeon Gold 5220S 18C 125W 2.7GHz Processor	2	2	2	2	2
4XG7A38005	B6CQ	Intel Xeon Gold 5220T 18C 105W 1.9GHz Processor	2	2	2	2	2
4XG7A37951	B5S1	Intel Xeon Gold 5222 4C 105W 3.8GHz Processor	2	2	2	2	2
CTO only	BAZV	Intel Xeon Gold 6208U 16C 150W 2.9GHz Processor	1	1	1	1	1
4XG7A38023	B6CV	Intel Xeon Gold 6222V 20C 115W 1.8GHz Processor	2	2	2	2	2
4XG7A38021	B6CL	Intel Xeon Gold 6226 12C 125W 2.7GHz Processor	2	2	2	2	2
4XG7A38082	BAZW	Intel Xeon Gold 6226R 16C 150W 2.9GHz Processor	2	2	2	2	2
4XG7A37889	B4HJ	Intel Xeon Gold 6230 20C 125W 2.1GHz Processor	2	2	2	2	2
4XG7A38028	B5RY	Intel Xeon Gold 6230N 20C 125W 2.3GHz Processor	2	2	No	2	2
4XG7A38081	BAZX	Intel Xeon Gold 6230R 26C 150W 2.1GHz Processor	2	2	2	2	2
4XG7A38006	B6CP	Intel Xeon Gold 6230T 20C 125W 2.1GHz Processor	2	2	2	2	2
4XG7A38001	B6CK	Intel Xeon Gold 6234 8C 130W 3.3GHz Processor	2	2	2	2	2
4XG7A38008	B6CJ	Intel Xeon Gold 6238 22C 140W 2.1GHz Processor	2	2	2	2	2
4XG7A38003	B6CR	Intel Xeon Gold 6238L 22C 140W 2.1GHz Processor	2	2	2	2	2
4XG7A38080	BAZL	Intel Xeon Gold 6238R 28C 165W 2.2GHz Processor	No	2	2	2	2
4XG7A15895	B4HH	Intel Xeon Gold 6240 18C 150W 2.6GHz Processor	2	2	2	2	2
4XG7A38015	B6CS	Intel Xeon Gold 6240L 18C 150W 2.6GHz Processor	2	2	2	2	2
4XG7A38079	BAZM	Intel Xeon Gold 6240R 24C 165W 2.4GHz Processor	No	2	2	2	2
4XG7A37903	B4NV	Intel Xeon Gold 6240Y 18/14/8C 150W 2.6GHz Processor	No	2	2	2	2
4XG7A37886	B4HG	Intel Xeon Gold 6242 16C 150W 2.8GHz Processor	2	2	2	2	2
4XG7A38078	BAZN	Intel Xeon Gold 6242R 20C 205W 3.1GHz Processor	No	No	2	2	2
4XG7A15874	B4HF	Intel Xeon Gold 6244 8C 150W 3.6GHz Processor	No	No	2	2	2
4XG7A37963	B6PD	Intel Xeon Gold 6246 12C 165W 3.3GHz Processor	2	2	2	2	2
4XG7A38077	BAZP	Intel Xeon Gold 6246R 16C 205W 3.4GHz Processor	No	No	2	2	2

Part number	Feature	Description	VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
			Maximum supported				
4XG7A15892	B4HE	Intel Xeon Gold 6248 20C 150W 2.5GHz Processor	2	2	2	2	2
4XG7A38076	BAZQ	Intel Xeon Gold 6248R 24C 205W 3.0GHz Processor	No	No	2	2	2
4XG7A38075	B96C	Intel Xeon Gold 6250 8C 185W 3.9GHz Processor	No	No	2	2	2
4XG7A15889	B4HC	Intel Xeon Gold 6252 24C 150W 2.1GHz Processor	2	2	2	2	2
4XG7A38011	B6CT	Intel Xeon Gold 6252N 24C 150W 2.3GHz Processor	2	2	2	2	2
4XG7A15872	B4HD	Intel Xeon Gold 6254 18C 200W 3.1GHz Processor	No	No	2	2	2
4XG7A38074	B96D	Intel Xeon Gold 6256 12C 205W 3.6GHz Processor	No	No	2	2	2
4XG7A38073	BAZR	Intel Xeon Gold 6258R 28C 205W 2.7GHz Processor	No	No	2	2	2
4XG7A38010	B6CU	Intel Xeon Gold 6262V 24C 135W 1.9GHz Processor	2	2	2	2	2
Intel Xeon Platinum processors							
4XG7A37898	B5RZ	Intel Xeon Platinum 8253 16C 125W 2.2GHz Processor	2	2	2	2	2
4XG7A37947	B5S2	Intel Xeon Platinum 8256 4C 105W 3.8GHz Processor	2	2	2	2	2
4XG7A15887	B4HB	Intel Xeon Platinum 8260 24C 165W 2.4GHz Processor	No	2	2	2	2
4XG7A15885	B4P7	Intel Xeon Platinum 8260L 24C 165W 2.4GHz Processor	No	2	2	2	2
4XG7A37901	B4NU	Intel Xeon Platinum 8260Y 24/20/16C 165W 2.4GHz Processor	No	2	2	2	2
4XG7A15870	B4HA	Intel Xeon Platinum 8268 24C 205W 2.9GHz Processor	No	No	2	2	2
4XG7A15868	B4H9	Intel Xeon Platinum 8270 26C 205W 2.7GHz Processor	No	No	2	2	2
4XG7A15881	B4H8	Intel Xeon Platinum 8276 28C 165W 2.2GHz Processor	No	2	2	2	2
4XG7A15877	B4P6	Intel Xeon Platinum 8276L 28C 165W 2.2GHz Processor	No	2	2	2	2
4XG7A15866	B4H7	Intel Xeon Platinum 8280 28C 205W 2.7GHz Processor	No	No	2	2	2
4XG7A15862	B4P5	Intel Xeon Platinum 8280L 28C 205W 2.7GHz Processor	No	No	2	2	2

Memory

The VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes systems support the following memory options.

For details about these options, including configuration rules, see the SR650 product guide: https://lenovopress.com/lp1050-thinksystem-sr650-server#memory

Table 6. Memory options

Part number	Feature	Description	Maximum supported				
			VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
RDIMMs - 2933 MHz Performance+							
4X77A12184	B5N6	ThinkSystem 16GB TruDDR4 Performance+ 2933MHz (2Rx8 1.2V) RDIMM	24	24	24	24	24
4X77A12185	B5N7	ThinkSystem 32GB TruDDR4 Performance+ 2933MHz (2Rx4 1.2V) RDIMM	24	24	24	24	24
4X77A12186	B5N8	ThinkSystem 64GB TruDDR4 Performance+ 2933MHz (2Rx4 1.2V) RDIMM	24	24	24	24	24
RDIMMs - 2933 MHz							
4ZC7A08706	B4H1	ThinkSystem 8GB TruDDR4 2933MHz (1Rx8 1.2V) RDIMM	24	24	24	24	24
4ZC7A08707	B4LY	ThinkSystem 16GB TruDDR4 2933 MHz (1Rx4 1.2V) RDIMM	24	24	24	24	24
4ZC7A08708	B4H2	ThinkSystem 16GB TruDDR4 2933MHz (2Rx8 1.2V) RDIMM	24	24	24	24	24
4ZC7A08709	B4H3	ThinkSystem 32GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM	24	24	24	24	24
4ZC7A08710	B4H4	ThinkSystem 64GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM	24	24	24	24	24
RDIMMs - 2666 MHz							
7X77A01303	AUNC	ThinkSystem 16GB TruDDR4 2666 MHz (2Rx8 1.2V) RDIMM	24	24	24	24	24
7X77A01304	AUND	ThinkSystem 32GB TruDDR4 2666 MHz (2Rx4 1.2V) RDIMM	24	24	24	24	24
3DS RDIMMs - 2933 MHz Performance+							
4X77A12187	B5N9	ThinkSystem 128GB TruDDR4 Performance+ 2933MHz (4Rx4 1.2V) 3DS RDIMM	24	24	24	24	24
3DS RDIMMs - 2933 MHz							
4ZC7A15113	B587	ThinkSystem 128GB TruDDR4 2933MHz (4Rx4 1.2V) 3DS RDIMM	24	24	24	24	24
3DS RDIMMs - 2666 MHz							
4ZC7A08716	AUW5	ThinkSystem 64GB TruDDR4 2666MHz (4Rx4, 1.2V) 3DS RDIMM	24	24	24	24	24

Persistent Memory

The VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes systems support the following persistent memory options.

For details about these options, including configuration rules, see the SR650 product guide: https://lenovopress.com/lp1050-thinksystem-sr650-server#persistent-memory

Table 7. Persistent memory options

Part number	Feature	Description	VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
			Maximum supported				
4ZC7A15110	B4LV	ThinkSystem 128GB TruDDR4 2666MHz (1.2V) Intel Optane DC Persistent Memory	No	No	No	12	12
4ZC7A15111	B4LW	ThinkSystem 256GB TruDDR4 2666MHz (1.2V) Intel Optane DC Persistent Memory	No	No	No	12	12
4ZC7A15112	B4LX	ThinkSystem 512GB TruDDR4 2666MHz (1.2V) Intel Optane DC Persistent Memory	No	No	No	12	12

Internal storage

Internal storage configurations of the VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes are as follows. All drives are hot-swap and are accessible from the front or rear of the system:

- ThinkAgile VX3520-G Appliance
  - Front drive bays: 16x 2.5-inch SAS/SATA
  - Rear drive bays: None

- ThinkAgile VX5520 Appliance
  - Front drive bays: 12x 3.5-inch SAS/SATA
  - Rear drive bays: 2x 3.5-inch SAS/SATA

- ThinkAgile VX7520 Appliance
  - Front drive bays - 3 configurations:
    - 20x SAS/SATA + 4x AnyBay (Configurations with SAS/SATA capacity drives): 2x SAS/SATA backplanes and 1x AnyBay backplane
    - 16x SAS/SATA + 8x AnyBay (Configurations with NVMe capacity drives): 1x SAS/SATA backplane and 2x AnyBay backplanes
    - 24x NVMe: 3x NVMe backplanes
  - Rear drive bays: None

- ThinkAgile VX 2U Certified Node
  - Up to 16x 2.5" and 2x 3.5" drive bays:
    - 16x 2.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
    - 12x 2.5" SAS/SATA & 4x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
    - 8x 2.5" SAS/SATA & 8x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
  - Up to 24x 2.5" and 2x 3.5" drive bays:
    - 24x 2.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
    - 20x 2.5" SAS/SATA & 4x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
    - 16x 2.5" SAS/SATA & 8x 2.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
    - 16x 2.5" NVMe & 8x 2.5" SAS/SATA (front)
    - 24x 2.5" NVMe (front)

- Up to 14x 3.5" drive bays:
  - 12x 3.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
  - 8x 3.5" SAS/SATA & 4x 3.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
- ThinkAgile VX 2U Certified Node for SAP HANA
  - Up to 16x 2.5" drive bays:
    - 16x 2.5" SAS/SATA (front)
    - 12x 2.5" SAS/SATA & 4x 2.5" AnyBay (front)
    - 8x 2.5" SAS/SATA & 8x 2.5" AnyBay (front)
  - Up to 24x 2.5" drive bays:
    - 24x 2.5" SAS/SATA (front)
    - 20x 2.5" SAS/SATA & 4x 2.5" AnyBay (front)
    - 16x 2.5" SAS/SATA & 8x 2.5" AnyBay (front)
    - 16x 2.5" NVMe + 8x 2.5" SAS/SATA
    - 24x 2.5" NVMe
  - No rear drives

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

Ordering information is listed in the following table.

Table 8. Drive backplanes

Feature	Description	Maximum supported				
		VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
Front 2.5-inch drive backplanes						
AURA	ThinkSystem 2U/Twr 2.5" SATA/SAS 8-Bay Backplane (8x SATA/SATA)	3	No	2	3	3
AUR5	ThinkSystem 2U/Twr 2.5" AnyBay 8-Bay Backplane (4x SAS/SATA + 4x AnyBay)	No	No	2	3	3
B4PC	ThinkSystem 2U 2.5" NVMe 8-Bay Backplane (8x NVMe)	No	No	3	3	3
Front 3.5-inch drive backplanes						
AUR9	ThinkSystem 2U 3.5" SATA/SAS 12-Bay Backplane (12x SAS/SATA)	No	1	No	1	No
AUR8	ThinkSystem 2U 3.5" AnyBay 12-Bay Backplane (8x SAS/SATA + 4x AnyBay)	No	No	No	1	No
Rear 3.5-inch drive backplanes						
AURZ	ThinkSystem SR590/SR650 Rear HDD/SSD Kit (2x SAS/SATA)	No	1	No	1	No

For details about these components, including configuration rules, see the SR650 product guide: https://lenovopress.com/lp1050-thinksystem-sr650-server#internal-storage

The following figures show the internal drive bay configurations.
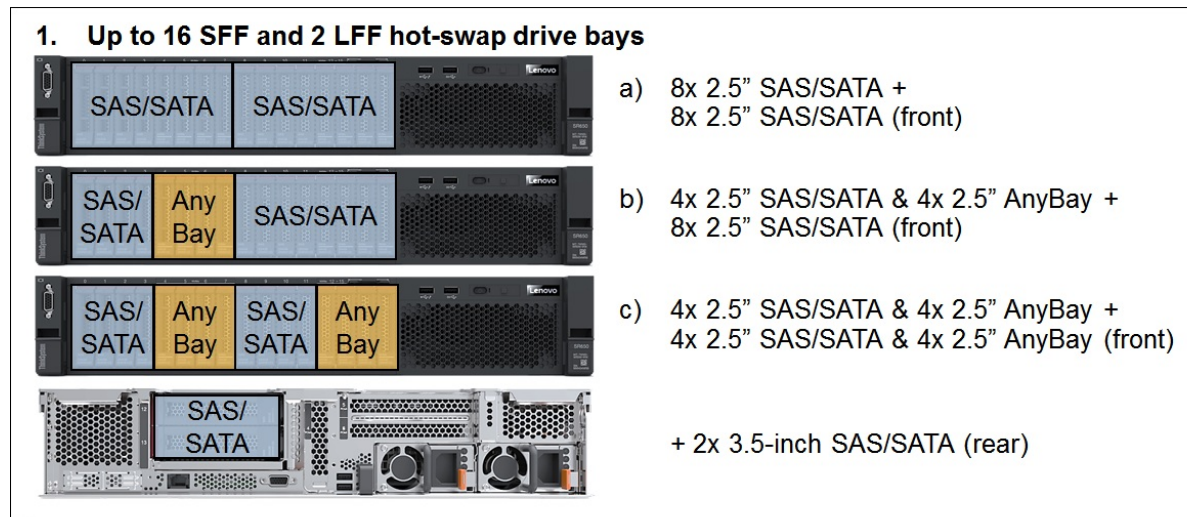

Figure 9. Drive bay configurations: 2.5-inch 8/16-bay chassis
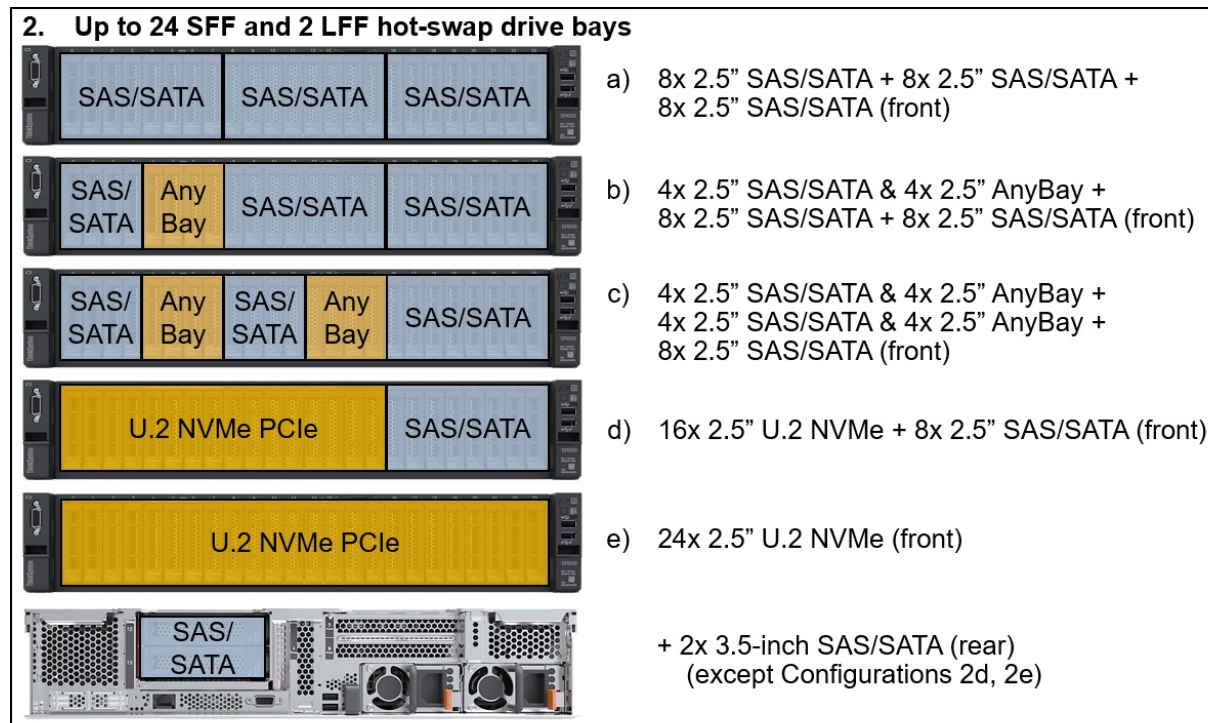

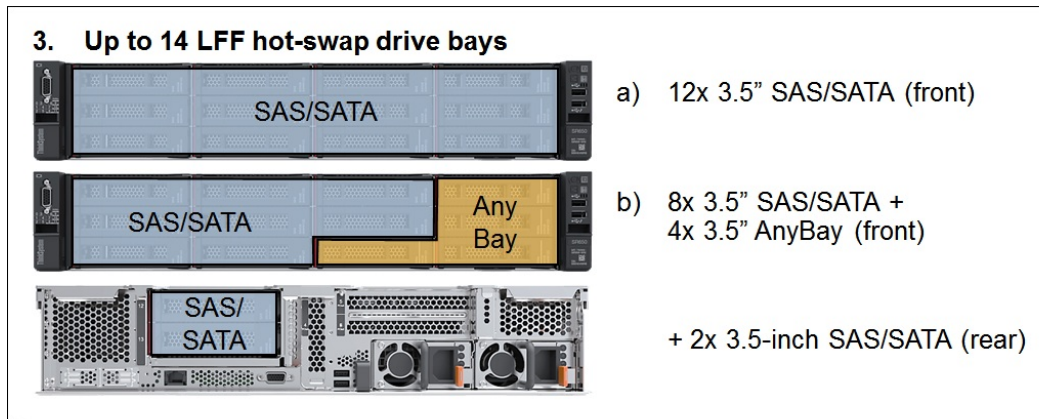Figure 10. Drive bay configurations: 2.5-inch 8/16/24-bay chassis

Figure 11. Drive bay configurations: 3.5-inch 8/12-bay chassis

Disk Groups

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

Table 9. Disk Groups

Drive Selection Rules	VX3520-G Appliance	VX5520 Appliance	VX7520 Appliance	VX 2U Certified Node	VX 2U Certified Node for HANA
Model Type	Hybrid (HY) All Flash (AF)	Hybrid (HY) All Flash (AF)	Hybrid (HY) All Flash (AF)	Hybrid (HY) All Flash (AF)	All Flash (AF)
Maximum number of drives	16	14	24	24	24
Number of Disk Groups	1 - 4	1 - 2	1 - 4	1 - 4	2 - 4
Number of Cache Drives per Disk Group	1	1	1	1	1
Number of Capacity Drives per Disk Group	2 - 7	2 - 7	2 - 7	2 - 7	2 - 7
Allowed Capacity Drive Quantities:					
1 Disk Group (1 Cache Drive)	2, 3, 4, 5, 6 or 7	2, 3, 4, 5, 6 or 7	2, 3, 4, 5, 6 or 7	2, 3, 4, 5, 6 or 7	Not supported
2 Disk Groups (2 Cache Drives)	4, 6, 8, 10, 12 or 14	4, 6, 8, 10 or 12	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 or 12	6 or 9	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 or 12	8	8, 12, 16 or 20	8, 12, 16 or 20	8, 12, 16 or 20
5 Disk Groups (5 Cache Drives)	10	Not supported	10 or 15	10 or 15	Not supported

Controllers for internal storage

The VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes systems support the following storage controller options.

For details about these components, including configuration rules, see the SR650 product guide: https://lenovopress.com/lp1050-thinksystem-sr650-server#controllers-for-internal-storage

Table 10. Controllers for internal storage

Part number	Feature	Description	Maximum supported				
			VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
12 Gb SAS/SATA non-RAID HBAs							
7Y37A01088	AUNL	ThinkSystem 430-8i SAS/SATA 12Gb HBA	No	No	4	4	3
4Y37A72480	BJHH	ThinkSystem 4350-8i SAS/SATA 12Gb HBA	2	2	4	4	3
4Y37A78601	BM51	ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA	2	2	4	4	3
7Y37A01089	AUNM	ThinkSystem 430-16i SAS/SATA 12Gb HBA	1	1	2	2	2
4Y37A72481	BJHJ	ThinkSystem 4350-16i SAS/SATA 12Gb HBA	1	1	2	2	2
4Y37A78602	BM50	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA	1	1	2	2	2
NVMe PCIe interfaces							
None	B22D	ThinkSystem 810-4P NVMe Switch Adapter	No	No	4	4	4
7Y37A01081	AUV2	ThinkSystem 1610-4P NVMe Switch Adapter	No	No	3	3	3
None	B4PA	ThinkSystem 1610-8P NVMe Switch Adapter	No	No	1	1	1

Internal drive options

This section lists the supported drives:

- Boot drives
- Internal drives for VX3520-G
- Internal drives for VX5520
- Internal drives for VX7520
- Internal drives for VX 2U Certified Node
- Internal drives for VX 2U for SAP HANA Certified Node

Boot drives

The VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes systems support the following drive for boot functions.

Table 11. Boot drives

Part number	Feature	Description	Maximum supported VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
M.2 SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)							
4XB7A17071	B8HS	ThinkSystem M.2 5300 240GB SATA 6Gbps Non-Hot Swap SSD	No	No	No	2	2
4XB7A17073	B919	ThinkSystem M.2 5300 480GB SATA 6Gbps Non-Hot Swap SSD	2	2	2	2	2
4XB7A82286	BQ1Z	ThinkSystem M.2 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD	2	2	2	2	2
4XB7A82287	BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	2	2	2	2	2
4XB7A82288	BQ20	ThinkSystem M.2 5400 PRO 960GB Read Intensive SATA 6Gb NHS SSD	2	2	2	2	2

Internal drives for VX3520-G Appliance

The following table lists the drives supported in the VX3520-G Appliance. For both All Flash Storage and Hybrid Storage configurations, drives are classified as either Cache drives, Capacity drives, or both.

Table 12. Drives supported in the VX3520-G Appliance

Part number	Feature	Description	All Flash Storage Cache	Capacity	Hybrid Storage Cache	Capacity
2.5-inch hot-swap 12 Gb SAS HDDs						
7XB7A00026	AUM0	ThinkSystem 2.5" 900GB 10K SAS 12Gb Hot Swap 512n HDD	No	No	No	16
7XB7A00027	AUM1	ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD	No	No	No	16
7XB7A00028	AUM2	ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD	No	No	No	16
7XB7A00069	B0YS	ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD	No	No	No	16
7XB7A00023	AULX	ThinkSystem 2.5" 900GB 15K SAS 12Gb Hot Swap 512e HDD	No	No	No	16
7XB7A00034	AUM6	ThinkSystem 2.5" 1TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	16
7XB7A00035	AUM7	ThinkSystem 2.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	16
2.5-inch hot-swap 12 Gb SAS SSDs						
4XB7A70006	BG07	ThinkSystem 2.5" Nytro 3732 400GB Performance SAS 12Gb Hot Swap SSD	16	16	16	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A70005	BG06	ThinkSystem 2.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A70004	BG05	ThinkSystem 2.5" Nytro 3732 1.6TB Performance SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A70003	BG04	ThinkSystem 2.5" Nytro 3732 3.2TB Performance SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A10230	B4Y5	ThinkSystem 2.5" SS530 800GB Performance SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A17062	B8HU	ThinkSystem 2.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A17063	B8J4	ThinkSystem 2.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A17064	B8JD	ThinkSystem 2.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A38175	B91A	ThinkSystem 2.5" PM1643a 960GB Entry SAS 12Gb Hot Swap SSD	No	16	No	No
4XB7A38176	B91B	ThinkSystem 2.5" PM1643a 1.92TB Entry SAS 12Gb Hot Swap SSD	No	16	No	16
4XB7A17054	B91C	ThinkSystem 2.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A17055	B91D	ThinkSystem 2.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap SSD	16	16	16	No
4XB7A17056	BC4R	ThinkSystem 2.5" PM1643a 15.36TB Entry SAS 12Gb Hot Swap SSD	16	16	16	No
2.5-inch hot-swap 6 Gb SATA SSDs						
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	16	16	16	No
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	16	16	16	No
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	16	16	16	No
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	16	16	16	No
4XB7A17088	B8HY	ThinkSystem 2.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD	16	16	16	No
4XB7A17089	B8J6	ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	16	16	16	No
4XB7A17090	B8JE	ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD	16	16	16	No
4XB7A17091	B8J7	ThinkSystem 2.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD	16	16	16	No
4XB7A13634	B49M	ThinkSystem 2.5" S4610 480GB Mixed Use SATA 6Gb HS SSD	16	16	No	No
4XB7A13635	B49N	ThinkSystem 2.5" S4610 960GB Mixed Use SATA 6Gb HS SSD	16	16	16	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A13636	B49P	ThinkSystem 2.5" S4610 1.92TB Mixed Use SATA 6Gb HS SSD	16	16	16	No
4XB7A13637	B49Q	ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	16	16	16	No
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	No	16	16	No
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	16	16	16	No
4XB7A72442	BM87	ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD	16	16	16	No
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A17076	B8JM	ThinkSystem 2.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD	No	16	No	No
4XB7A17077	B8HP	ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD	No	16	16	16
4XB7A17078	B8J5	ThinkSystem 2.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD	16	16	16	No
4XB7A17079	B8JP	ThinkSystem 2.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD	16	16	16	No
4XB7A17080	B8J2	ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD	No	16	No	No
4XB7A10248	B499	ThinkSystem 2.5" S4510 480GB Read Intensive SATA 6Gb HS SSD	No	16	No	No
4XB7A10249	B49A	ThinkSystem 2.5" S4510 960GB Read Intensive SATA 6Gb HS SSD	No	16	16	No
4XB7A13622	B49B	ThinkSystem 2.5" S4510 1.92TB Read Intensive SATA 6Gb HS SSD	No	16	16	No
4XB7A13623	B49C	ThinkSystem 2.5" S4510 3.84TB Read Intensive SATA 6Gb HS SSD	No	16	16	No
4XB7A10196	B34J	ThinkSystem 2.5" PM883 480GB Entry SATA 6Gb Hot Swap SSD	No	16	No	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A10197	B34K	ThinkSystem 2.5" PM883 960GB Entry SATA 6Gb Hot Swap SSD	No	16	No	No
4XB7A10198	B34L	ThinkSystem 2.5" PM883 1.92TB Entry SATA 6Gb Hot Swap SSD	No	16	16	No
4XB7A10199	B34M	ThinkSystem 2.5" PM883 3.84TB Entry SATA 6Gb Hot Swap SSD	16	16	16	No
4XB7A10200	B4D2	ThinkSystem 2.5" PM883 7.68TB Entry SATA 6Gb Hot Swap SSD	16	16	16	No
2.5-inch hot-swap PCIe 4.0 NVMe SSDs						
4XB7A38284	BE2F	ThinkSystem U.2 PM1733 15.36TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	No	16	No	No

Internal drives for VX5520 Appliance

The following table lists the drives supported in the VX5520 Appliance. For both All Flash Storage and Hybrid Storage configurations, drives are classified as either Cache drives, Capacity drives, or both.

Table 13. Drives supported in the VX5520 Appliance

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
3.5-inch hot-swap 12 Gb SAS HDDs						
7XB7A00041	AUU4	ThinkSystem 3.5" 1TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	14
7XB7A00042	AUU5	ThinkSystem 3.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	14
7XB7A00043	AUU6	ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	14
7XB7A00044	AUU7	ThinkSystem 3.5" 6TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	No	No	14
7XB7A00045	B0YR	ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	No	No	14
3.5-inch hot-swap 12 Gb SAS SSDs						
4XB7A70011	BG03	ThinkSystem 3.5" Nytro 3732 400GB Performance SAS 12Gb Hot Swap SSD	14	14	14	No
4XB7A70010	BG02	ThinkSystem 3.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD	14	14	14	No
4XB7A70009	BG01	ThinkSystem 3.5" Nytro 3732 1.6TB Performance SAS 12Gb Hot Swap SSD	14	14	14	No
4XB7A70008	BG00	ThinkSystem 3.5" Nytro 3732 3.2TB Performance SAS 12Gb Hot Swap SSD	14	14	14	No
4XB7A10234	B4Y8	ThinkSystem 3.5" SS530 800GB Performance SAS 12Gb Hot Swap SSD	14	14	14	No
4XB7A17066	B8HT	ThinkSystem 3.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD	14	14	14	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A17043	B8JN	ThinkSystem 3.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD	14	14	14	No
4XB7A17067	B8JK	ThinkSystem 3.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD	14	14	14	No
4XB7A17058	B91E	ThinkSystem 3.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD	14	14	14	No
3.5-inch hot-swap 6 Gb SATA SSDs						
4XB7A17137	BA4W	ThinkSystem 3.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	14	14	14	No
4XB7A17138	BA4X	ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	14	14	14	No
4XB7A17139	BA4Y	ThinkSystem 3.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	14	14	14	No
4XB7A17140	BK7P	ThinkSystem 3.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	14	14	14	No
4XB7A17097	B8JF	ThinkSystem 3.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD	14	14	14	No
4XB7A17098	B8J0	ThinkSystem 3.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	14	14	14	No
4XB7A17099	B8HR	ThinkSystem 3.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD	14	14	14	No
4XB7A17100	B8HX	ThinkSystem 3.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD	14	14	14	No
4XB7A13640	B49S	ThinkSystem 3.5" S4610 480GB Mixed Use SATA 6Gb HS SSD	No	14	14	No
4XB7A13641	B49T	ThinkSystem 3.5" S4610 960GB Mixed Use SATA 6Gb HS SSD	14	14	14	No
4XB7A13642	B49U	ThinkSystem 3.5" S4610 1.92TB Mixed Use SATA 6Gb HS SSD	14	14	14	No
4XB7A13643	B49V	ThinkSystem 3.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	14	14	14	No
4XB7A17119	BA7L	ThinkSystem 3.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	14	14	No
4XB7A17120	BA7M	ThinkSystem 3.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	14	14	14	No
4XB7A17121	BA7N	ThinkSystem 3.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	14	14	14	No
4XB7A17122	BK7F	ThinkSystem 3.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	14	14	14	No
4XB7A17123	BK7G	ThinkSystem 3.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	14	14	14	No
4XB7A17083	B8JC	ThinkSystem 3.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD	No	14	14	No
4XB7A17084	B8HZ	ThinkSystem 3.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD	14	14	14	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A17085	B8HQ	ThinkSystem 3.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD	14	14	14	No
4XB7A13627	B49F	ThinkSystem 3.5" S4510 960GB Read Intensive SATA 6Gb HS SSD	No	14	14	No
4XB7A13628	B49G	ThinkSystem 3.5" S4510 1.92TB Read Intensive SATA 6Gb HS SSD	No	14	14	No
4XB7A13629	B49H	ThinkSystem 3.5" S4510 3.84TB Read Intensive SATA 6Gb HS SSD	No	14	14	No

Internal drives for VX7520 Appliance

The following table lists the drives supported in the VX7520 Appliance. For both All Flash Storage and Hybrid Storage configurations, drives are classified as either Cache drives, Capacity drives, or both.

Table 14. Drives supported in the VX7520 Appliance

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
2.5-inch hot-swap 12 Gb SAS HDDs						
7XB7A00026	AUM0	ThinkSystem 2.5" 900GB 10K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
7XB7A00027	AUM1	ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
7XB7A00028	AUM2	ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD	No	No	No	24
7XB7A00069	B0YS	ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD	No	No	No	24
7XB7A00023	AULX	ThinkSystem 2.5" 900GB 15K SAS 12Gb Hot Swap 512e HDD	No	No	No	24
7XB7A00034	AUM6	ThinkSystem 2.5" 1TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
7XB7A00035	AUM7	ThinkSystem 2.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
2.5-inch hot-swap 12 Gb SAS SSDs						
4XB7A70006	BG07	ThinkSystem 2.5" Nytro 3732 400GB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A70005	BG06	ThinkSystem 2.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A70004	BG05	ThinkSystem 2.5" Nytro 3732 1.6TB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A70003	BG04	ThinkSystem 2.5" Nytro 3732 3.2TB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17062	B8HU	ThinkSystem 2.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD	24	24	24	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A17063	B8J4	ThinkSystem 2.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17064	B8JD	ThinkSystem 2.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A38175	B91A	ThinkSystem 2.5" PM1643a 960GB Entry SAS 12Gb Hot Swap SSD	No	24	No	No
4XB7A38176	B91B	ThinkSystem 2.5" PM1643a 1.92TB Entry SAS 12Gb Hot Swap SSD	No	24	24	No
4XB7A17054	B91C	ThinkSystem 2.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17055	B91D	ThinkSystem 2.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17056	BC4R	ThinkSystem 2.5" PM1643a 15.36TB Entry SAS 12Gb Hot Swap SSD	24	24	24	No
2.5-inch hot-swap 6 Gb SATA SSDs						
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17088	B8HY	ThinkSystem 2.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17089	B8J6	ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17090	B8JE	ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17091	B8J7	ThinkSystem 2.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A13637	B49Q	ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72442	BM87	ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	24	No	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17076	B8JM	ThinkSystem 2.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD	No	24	No	No
4XB7A17077	B8HP	ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD	No	24	24	No
4XB7A17078	B8J5	ThinkSystem 2.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17079	B8JP	ThinkSystem 2.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17080	B8J2	ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD	No	24	No	No
2.5-inch hot-swap PCIe 4.0 NVMe SSDs						
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	No	No
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	No	No
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A17136	BA4V	ThinkSystem 2.5" U.2 P5620 12.8TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	No	No
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	No	No
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A17145	BCFT	ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	No	No
4XB7A38197	BC4Z	ThinkSystem U.2 PM1733 3.84TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	No	24	No	No
4XB7A38283	BE2E	ThinkSystem U.2 PM1733 7.68TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	No	24	No	No
4XB7A38284	BE2F	ThinkSystem U.2 PM1733 15.36TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	24	24	No	No

Internal drives for VX 2U Certified Node

The following table lists the drives supported in the VX 2U Certified Node. For both All Flash Storage and Hybrid Storage configurations, drives are classified as either Cache drives, Capacity drives, or both.

Table 15. Drives supported in the VX 2U Certified Node

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
2.5-inch hot-swap 12 Gb SAS HDDs						
7XB7A00026	AUM0	ThinkSystem 2.5" 900GB 10K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
7XB7A00027	AUM1	ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
7XB7A00028	AUM2	ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD	No	No	No	24
7XB7A00069	B0YS	ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD	No	No	No	24
7XB7A00023	AULX	ThinkSystem 2.5" 900GB 15K SAS 12Gb Hot Swap 512e HDD	No	No	No	24
7XB7A00034	AUM6	ThinkSystem 2.5" 1TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
7XB7A00035	AUM7	ThinkSystem 2.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD	No	No	No	24
2.5-inch hot-swap 12 Gb SAS SSDs						
4XB7A70006	BG07	ThinkSystem 2.5" Nytro 3732 400GB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A70005	BG06	ThinkSystem 2.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A70004	BG05	ThinkSystem 2.5" Nytro 3732 1.6TB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A70003	BG04	ThinkSystem 2.5" Nytro 3732 3.2TB Performance SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17062	B8HU	ThinkSystem 2.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17063	B8J4	ThinkSystem 2.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17064	B8JD	ThinkSystem 2.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A38175	B91A	ThinkSystem 2.5" PM1643a 960GB Entry SAS 12Gb Hot Swap SSD	No	24	No	No
4XB7A38176	B91B	ThinkSystem 2.5" PM1643a 1.92TB Entry SAS 12Gb Hot Swap SSD	No	24	24	No
4XB7A17054	B91C	ThinkSystem 2.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17055	B91D	ThinkSystem 2.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap SSD	24	24	24	No
4XB7A17056	BC4R	ThinkSystem 2.5" PM1643a 15.36TB Entry SAS 12Gb Hot Swap SSD	24	24	24	No
2.5-inch hot-swap 6 Gb SATA SSDs						

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A17125	BA7Q	ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A17088	B8HY	ThinkSystem 2.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17089	B8J6	ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17090	B8JE	ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17091	B8J7	ThinkSystem 2.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A13637	B49Q	ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	24	24	24	No
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A72442	BM87	ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD	24	24	24	No
4XB7A17101	BA7G	ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17102	BA7H	ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17105	BK78	ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD	No	24	No	No
4XB7A17076	B8JM	ThinkSystem 2.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD	No	24	No	No
4XB7A17077	B8HP	ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD	No	24	24	No
4XB7A17078	B8J5	ThinkSystem 2.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD	24	24	24	No

Part number	Feature	Description	All Flash Storage		Hybrid Storage	
			Cache	Capacity	Cache	Capacity
4XB7A17079	B8JP	ThinkSystem 2.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD	24	24	24	No
4XB7A17080	B8J2	ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD	No	24	No	No
2.5-inch hot-swap PCIe 4.0 NVMe SSDs						
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	No	No
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	No	No
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A17136	BA4V	ThinkSystem 2.5" U.2 P5620 12.8TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	No	No
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	No	No
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	24	24	No
4XB7A17145	BCFT	ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24	No	No
4XB7A38197	BC4Z	ThinkSystem U.2 PM1733 3.84TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	No	24	No	No
4XB7A38283	BE2E	ThinkSystem U.2 PM1733 7.68TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	No	24	No	No
4XB7A38284	BE2F	ThinkSystem U.2 PM1733 15.36TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	24	24	No	No

Internal drives for VX 2U Certified Node for SAP HANA

The following table lists the drives supported in the VX 2U Certified Node for SAP HANA. For both All Flash Storage and Hybrid Storage configurations, drives are classified as either Cache drives, Capacity drives, or both.

Table 16. Drives supported in the VX 2U Certified Node for SAP HANA

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
2.5-inch hot-swap 12 Gb SAS SSDs				
4XB7A70006	BG07	ThinkSystem 2.5" Nytro 3732 400GB Performance SAS 12Gb Hot Swap SSD	24	24
4XB7A70005	BG06	ThinkSystem 2.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD	24	24

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
4XB7A70004	BG05	ThinkSystem 2.5" Nytro 3732 1.6TB Performance SAS 12Gb Hot Swap SSD	24	24
4XB7A70003	BG04	ThinkSystem 2.5" Nytro 3732 3.2TB Performance SAS 12Gb Hot Swap SSD	24	24
4XB7A17062	B8HU	ThinkSystem 2.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD	24	24
4XB7A17063	B8J4	ThinkSystem 2.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD	24	24
4XB7A17064	B8JD	ThinkSystem 2.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD	24	24
4XB7A38175	B91A	ThinkSystem 2.5" PM1643a 960GB Entry SAS 12Gb Hot Swap SSD	No	24
4XB7A38176	B91B	ThinkSystem 2.5" PM1643a 1.92TB Entry SAS 12Gb Hot Swap SSD	No	24
4XB7A17054	B91C	ThinkSystem 2.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD	24	24
4XB7A17055	B91D	ThinkSystem 2.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap 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 SATA SSDs				
4XB7A17088	B8HY	ThinkSystem 2.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD	24	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
4XB7A17091	B8J7	ThinkSystem 2.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD	24	24
4XB7A13637	B49Q	ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD	24	24
4XB7A72438	BM8B	ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A72439	BM8A	ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD	24	24
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	24	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
4XB7A17076	B8JM	ThinkSystem 2.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD	No	24

Part number	Feature	Description	All Flash Storage	
			Cache	Capacity
4XB7A17077	B8HP	ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD	No	24
4XB7A17078	B8J5	ThinkSystem 2.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD	24	24
4XB7A17079	B8JP	ThinkSystem 2.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD	24	24
4XB7A17080	B8J2	ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD	No	24
2.5-inch hot-swap PCIe 4.0 NVMe SSDs				
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24
4XB7A17136	BA4V	ThinkSystem 2.5" U.2 P5620 12.8TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	24
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	24
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	24
4XB7A17145	BCFT	ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	No	24
4XB7A38197	BC4Z	ThinkSystem U.2 PM1733 3.84TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	No	24
4XB7A38283	BE2E	ThinkSystem U.2 PM1733 7.68TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	No	24
4XB7A38284	BE2F	ThinkSystem U.2 PM1733 15.36TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD	24	24

Network adapters

The VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes systems support the following networking options.

For details about these options, including configuration rules, see the SR650 product guide:
https://lenovopress.com/lp1050-thinksystem-sr650-server#i-o-expansion
https://lenovopress.com/lp1050-thinksystem-sr650-server#network-adapters

Table 17. LOM network adapters

Part number	Feature	Description	Maximum supported				
			VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
LOM cards - 1 Gb Ethernet							
7ZT7A00544	AUKG	ThinkSystem 1Gb 2-port RJ45 LOM	No	No	No	1	1
7ZT7A00545	AUKH	ThinkSystem 1Gb 4-port RJ45 LOM	No	No	No	1	1
LOM cards - 10 Gb Ethernet							
7ZT7A00548	AUKL	ThinkSystem 10Gb 2-port Base-T LOM	1	1	1	1	1
7ZT7A00546	AUKJ	ThinkSystem 10Gb 2-port SFP+ LOM	1	1	1	1	1
7ZT7A00549	AUKM	ThinkSystem 10Gb 4-port Base-T LOM	1	1	1	1	1
7ZT7A00547	AUKK	ThinkSystem 10Gb 4-port SFP+ LOM	1	1	1	1	1

Table 18. PCIe network adapters

Part number	Feature	Description	Maximum supported				
			VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
ML2 adapters - 10 Gb Ethernet							
01CV770	AU7Z	Emulex VFA5.2 ML2 2x10 GbE SFP+ Adapter and FCoE/iSCSI SW	No	No	No	1	1
00JY940	ATRH	Intel X710-DA2 ML2 2x10GbE SFP+ Adapter	No	No	No	1	1
ML2 adapters - 25 Gb Ethernet							
00MN990	ATZR	Mellanox ConnectX-4 Lx 10/25GbE SFP28 1-port ML2 Adapter	No	No	No	1	1
7ZT7A00507	AUKU	ThinkSystem Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-Port ML2 Ethernet Adapter	No	No	No	1	1
PCIe Low Profile adapters - 1 Gb Ethernet							
7ZT7A00482	AUZX	ThinkSystem Broadcom 5720 1GbE RJ45 2-Port PCIe Ethernet Adapter	No	No	No	6	6
7ZT7A00484	AUZV	ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter	No	No	No	6	6
7ZT7A00534	AUZY	ThinkSystem I350-T2 PCIe 1Gb 2-Port RJ45 Ethernet Adapter	No	No	No	6	6
7ZT7A00535	AUZW	ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter	No	2	No	6	6
PCIe Low Profile adapters - 10 Gb Ethernet							
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	6	6	6	6	6
00AG570	AT7S	Emulex VFA5.2 2x10 GbE SFP+ PCIe Adapter	6	6	6	6	6

Part number	Feature	Description	Maximum supported				
			VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
00MM860	ATPX	Intel X550-T2 Dual Port 10GBase-T Adapter	6	6	6	6	6
7ZT7A00537	AUKX	ThinkSystem Intel X710-DA2 PCIe 10Gb 2-Port SFP+ Ethernet Adapter	6	6	6	6	6
4XC7A08225	B31G	ThinkSystem QLogic QL41134 PCIe 10Gb 4-Port Base-T Ethernet Adapter	6	6	6	6	6
4XC7A79699	BMXB	ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter	6	6	6	6	6
PCIe Full Height adapters - 10 Gb Ethernet							
7ZT7A00493	AUKN	ThinkSystem Emulex OCe14104B-NX PCIe 10Gb 4-Port SFP+ Ethernet Adapter	6	6	6	6	6
PCIe Low Profile adapters - 25 Gb Ethernet							
7ZT7A00505	AUKS	ThinkSystem Broadcom 57412 25GbE SFP28 1-Port PCIe Ethernet Adapter	6	6	6	6	6
4XC7A08238	B5T0	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter	6	6	6	6	6
4XC7A08316	BD49	ThinkSystem Broadcom 57454 10/25GbE SFP28 4-port PCIe Ethernet Adapter V2	6	6	6	6	6
7XC7A05523	B0WY	ThinkSystem Intel XXV710-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	6	6	6	6	6
01GR250	AUAJ	Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port PCIe Ethernet Adapter	6	6	6	6	6
4XC7A62580	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	6	6	6	6	6
4XC7A08228	B21R	ThinkSystem QLogic QL41262 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	6	6	6	6	6
PCIe Low Profile adapters - 40 Gb Ethernet							
00MM950	ATRN	Mellanox ConnectX-4 Lx 1x40GbE QSFP+ Adapter	6	6	6	6	6
4XC7A08229	B31C	ThinkSystem Mellanox ConnectX-5 Ex 25/40GbE 2-port Low-Latency Adapter	3	3	3	3	3
PCIe x16 Low Profile adapters - 100 Gb Ethernet							
00MM960	ATRP	Mellanox ConnectX-4 2x100GbE/EDR IB QSFP28 VPI Adapter	3	3	3	3	3
4XC7A08248	B8PP	ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter	3	3	3	3	3
4C57A14177	B4R9	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 1-port PCIe VPI Adapter	2	2	2	2	2
4C57A14178	B4RA	ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 2-port PCIe VPI Adapter	2	2	2	2	2

GPU adapters

The VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes systems support the following GPU options.

For details about these options, including configuration rules, see the SR650 product guide:
https://lenovopress.com/lp1050-thinksystem-sr650-server#gpu-adapters

Table 19. GPU adapters

Part number	Feature	Description	Maximum supported				
			VX3520-G	VX5520	VX7520	VX 2U	VX 2U HANA
Single-wide PCIe x16 GPU adapters							
4X67A81547	BP05	ThinkSystem NVIDIA A2 16GB PCIe Gen4 Passive GPU	5	No	No	5	No
CTO Only	BQZT	ThinkSystem NVIDIA A2 16GB PCIe Gen4 Passive GPU w/o CEC	2	No	No	2	No
4X67A14926	B4YB	ThinkSystem NVIDIA T4 16GB PCIe Passive GPU	5	No	No	5	No
4X67A11584	B31D	ThinkSystem NVIDIA Quadro P620 2GB PCIe Active GPU	3	No	No	3	No
CTO only	BQZS	ThinkSystem NVIDIA A10 24GB PCIe Gen4 Passive GPU w/o CEC	4	No	No	4	No
Double-wide PCIe x16 GPU adapters							
4X67A76727	BNFE	ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU	2	No	No	2	No
CTO Only	BQZU	ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU w/o CEC	2	No	No	2	No
4X67A71310	BFT0	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	2	No	No	2	No
CTO Only	BQZQ	ThinkSystem NVIDIA A40 48GB PCIe Gen4 Passive GPU w/o CEC	2	No	No	2	No
7C57A02891	B15V	NVIDIA Tesla M10 GPU, PCIe passive	2	No	No	2	No
CTO only	BQZR	ThinkSystem NVIDIA A30 24GB PCIe Gen4 Passive GPU w/o CEC	2	No	No	2	No
CTO only	BQZP	ThinkSystem NVIDIA A100 80GB PCIe Gen4 Passive GPU w/o CEC	2	No	No	2	No
4X67A76715	BLK1	ThinkSystem NVIDIA A100 80GB PCIe Gen4 Passive GPU	2	No	No	2	No

Operating system support

The ThinkAgile VX3520-G Appliance supports the following operating systems:

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

The ThinkAgile VX5520 Appliance supports the following operating systems:

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

The ThinkAgile VX7520 Appliance supports the following operating systems:

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

The ThinkAgile VX 2U Certified Node supports the following operating systems:

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

The ThinkAgile VX 2U Certified Node for SAP HANA supports the following operating systems:

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

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

Software

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

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

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

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

Configuration notes:

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

For the VX 2U 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 VX3520-G, VX5520, VX7520 and VX 2U Certified Nodes have a 3-year warranty based on the machine type:

- 7Y94 - 3 year warranty

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

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

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

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

- **Premier Support**

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

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

- **Warranty Upgrade (Preconfigured Support)**

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

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

- **Managed Services**

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

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

- **Technical Account Management (TAM)**

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

- **Enterprise Server Software Support**

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

- **YourDrive YourData**

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

- **Health Check**

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

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

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

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

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

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

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

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

Software maintenance

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

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

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

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

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

Deployment services

The following optional Lenovo basic installation services are available for the ThinkAgile VX Series Integrated Systems (appliances):

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

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

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

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

- **Onsite Deployment**: Install, configure, and validate solution on-site, and conduct knowledge transfer.

- **Remote Deployment**: Install, configure, and validate solution remotely, and conduct knowledge transfer.

- **Remote Health Check**: Report & remediation of hardware and cluster health issues, including firmware and software updates.

Table 20. 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 2U Certified Node for SAP HANA.

Regulatory compliance

The server conforms to the following standards:

- ANSI/UL 62368-1
- IEC 62368-1(CB Certificate and CB Test Report)
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 7, Class A
- CSA C22.2 No. 62368-1
- CISPR 32, Class A, CISPR 35
- Japan VCCI, Class A
- Taiwan BSMI CNS13438, Class A; CNS 14336-1; Section 5 of CNS15663
- CE, UKCA Mark (EN55032 Class A, EN62368-1, EN55024, EN55035, EN61000-3-2, EN61000-3-3, (EU) 2019/424, and EN50581)
- Korea KN32, Class A, KN35
- Russia, Belorussia and Kazakhstan, TP EAC 037/2016 (for RoHS)
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 62368.1
- China CELP certificate, HJ 2507-2011
- UL Green Guard, UL2819
- Energy Star 3.0
- EPEAT (NSF/ ANSI 426) Bronze
- China CCC certificate, GB17625.1;GB4943.1;GB/T9254
- China CECP certificate, CQC3135
- Japanese Energy-Saving Act

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

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 SR650 product guide:
  https://lenovopress.com/lp1050-thinksystem-sr650-server
- Interactive 3D Tour of the ThinkSystem SR650:
  https://lenovopress.com/lp0673-3d-tour-thinksystem-sr650
- Lenovo Press video walk-through of the ThinkSystem SR650:
  https://lenovopress.com/lp0700-thinksystem-sr650-server-video-walkthrough

Related product families

Product families related to this document are the following:

- 2-Socket Rack Servers
- ThinkAgile VX Series for VMware vSAN

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This document, LP1500, was created or updated on January 13, 2023.

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