ThinkAgile HX630 V3 1U Integrated System and Certified Node (Intel Xeon SP Gen 4)

Product Guide

The Lenovo ThinkAgile HX630 V3 1U Integrated System & Certified Nodes are 2-socket 1U systems that feature the 4th Generation Intel Xeon Scalable processors and are designed for deploying industry-leading hyperconvergence software from Nutanix on Lenovo enterprise platforms. Nutanix brings the benefits of web-scale technologies to enterprise applications through enterprise storage, data protection, infrastructure resilience, management and analytics, and security.

The 1U systems are available either as an Integrated Systems or Certified Nodes:

- HX630 V3 Integrated Systems and Certified Nodes for entry systems, VDI, server virtualization, and private cloud.
- HX630 V3 ROBO Integrated Systems and Certified Nodes for remote office and branch office.

HX Integrated Systems deliver fully validated and integrated Lenovo hardware and firmware, certified and preloaded with licensed Nutanix software. They also include ThinkAgile Advantage support with one single point of contact for support of the hardware and software.

HX Certified Nodes deliver fully validated Lenovo hardware and firmware, certified and can be preloaded with Nutanix software. Certified Nodes do not include licenses to Nutanix software and enhanced software support.

Figure 1. Lenovo ThinkAgile HX630 V3 1U Integrated System & Certified Nodes with 2.5-inch drive bays

Did you know?

The ThinkAgile HX630 V3 1U Integrated System & Certified Nodes are built on the Lenovo ThinkSystem SR630 V3 server that features enterprise-class reliability, management, and security.

The HX 630 V3 Integrated Systems offer ThinkAgile Advantage Single Point of Support for quick 24/7 problem reporting and resolution.

Key features

Combining performance and flexibility, the HX630 V3 are a great choice for enterprises of all sizes. The systems offer a broad selection of processors, memory and drives, and offers high performance features that industries such as finance, healthcare and telco need. Outstanding reliability, availability, and serviceability (RAS) and high-efficiency design can improve your business environment and can help save operational costs.

Appliance features

The HX Series Integrate System Series, HX630 V3 IS and HX630 V3 ROBO IS 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's most feature-rich hyperconverged infrastructure software from Nutanix.
- Provide quick and convenient path to implement a hyperconverged solution powered by Nutanix 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 (including all-NVMe) configurations.
- Deliver fully validated and integrated hardware and firmware that is certified with Nutanix software.
- Include Lenovo ThinkAgile Advantage Single Point of Support for quick 24/7 problem reporting and resolution.
- Offer Lenovo deployment services to get customers up and running quickly.

Certified Node features

The HX Certified Nodes Series, HX630 V3 CN and HX630 V3 ROBO CN offer the following key features:

- Built on proven and reliable Lenovo ThinkSystem servers that provide compute power for a variety of workloads and applications.
- Deliver fully validated and integrated hardware and firmware that is certified with Nutanix software.
- Preloaded with Nutanix software and ready for out-of-box deployment (Note: software licenses are not included).
- Provide flexibility in using the existing Nutanix term-based software licenses and active support contracts or purchasing new software licenses and support contracts from Nutanix.
- Offer optional Lenovo Professional Services to get customers up and running quickly

The Nutanix software running on the HX630 V3 delivers the following key features:

- A natively integrated solution for data protection and continuous availability at VM granularity that gives administrators an affordable range of options to meet the recovery point objectives (RPO) and recovery time objectives (RTO) for different applications.
- A fault resistant platform, with no single point of failure and no bottlenecks with shared-nothing architecture, where all data, metadata and services are distributed to all nodes within the cluster, that is built to detect, isolate and recover from failures anywhere in the system.
- An intuitive user-centric management experience to simplify every aspect of the IT infrastructure lifecycle and provide a single pane of glass to monitor and control Nutanix clusters, with simplified workflows and rich automation for common administrative tasks.
- Powerful security features, such as two-factor authentication and data-at-rest encryption, with a security development lifecycle that is integrated into product development to help customers meet the most stringent security requirements.

Hardware features

The ThinkAgile HX630 V3 1U Integrated System & Certified Nodes systems are based on the SR630 V2 and have the following hardware features:

Scalability and performance

The HX630 V3 offer numerous features to boost performance, improve scalability and reduce costs:

- Supports one or two fourth-generation Intel Xeon Processor Scalable processors
  - Up to 60 cores and 120 threads
  - Core speeds of up to 3.7 GHz
  - TDP ratings of up to 350 W
- Support for up to 32 TruDDR5 memory DIMMs operating at up to 4800 MHz means you have the fastest available memory subsystem.
- Supports configurations of 2 DIMMs per channel to operate at the 4400 MHz rated speed of the memory DIMMs.
- Using 256GB 3DS RDIMMs, the server supports up to 8TB of system memory.
- Supports up to three single-width GPUs, each up to 75W for substantial processing power in a 1U system.
- Supports up to 12x 2.5-inch hot-swap drive bays, by using combinations of front-accessible (up to 10 bays) and rear-accessible (2 bays)
- Supports four 3.5-inch drive bays for lower-cost high-capacity HDD storage.
- Supports up to 12x NVMe drives without oversubscription of PCIe lanes (1:1 connectivity) and without the need for additional NVMe adapters. The use of NVMe drives maximizes drive I/O performance, in terms of throughput and latency.
- Supports 12x SAS or SATA drives using 12Gb SAS/SATA HBAs.
- Supports up to two externally accessible 7mm hot-swap drives with RAID functionality for operating system boot functions.
- Supports M.2 drives for convenient operating system boot functions. Available M.2 adapters support either one M.2 drive or two M.2 drives in a RAID 1 configuration for performance and reliability.
- The server has a dedicated industry-standard OCP 3.0 small form factor (SFF) slot, with a PCIe 5.0 x16 interface, supporting a variety of Ethernet network adapters. A simple-swap mechanism with a thumbscrew and pull-tab enables tool-less installation and removal of the adapter. The adapter supports shared BMC network sideband connectivity to enable out-of-band systems management
- The server offers PCI Express 5.0 I/O expansion capabilities that doubles the theoretical maximum bandwidth of PCIe 4.0 (32GT/s in each direction for PCIe Gen 5, compared to 16 GT/s with PCIe Gen 4 and 8 GT/s with PCIe Gen 3). A PCIe 5.0 x16 slot provides 128 GB/s bandwidth, enough to support a dual-port 200GbE network connection.
- The server offers up to three PCIe 5.0 slots, all with rear access, plus a slot dedicated to the OCP adapter.

Availability and serviceability

The HX630 V3 provide many features to simplify serviceability and increase system uptime:

- The server offers Single Device Data Correction (SDDC, also known as Chipkill), Adaptive Double-Device Data Correction (ADDDC, also known as Redundant Bit Steering or RBS), and memory mirroring for redundancy in the event of a non-correctable memory failure.
- The server offers hot-swap drives for greater system uptime.
- Available M.2 RAID boot adapters support RAID-1 which can enable two SATA or two NVMe M.2 drives to be configured as a redundant pair.

- The server has up to two hot-swap redundant power supplies and up to eight hot-swap redundant fans to provide availability for business-critical applications.
- The light path diagnostics feature uses LEDs to lead the technician to failed (or failing) components, which simplifies servicing, speeds up problem resolution, and helps improve system availability.
- Solid-state drives (SSDs) offer more reliability and performance than traditional mechanical HDDs for greater uptime.
- Proactive Platform Alerts (including PFA and SMART alerts): Processors, voltage regulators, memory, internal storage (SAS/SATA HDDs and SSDs, NVMe SSDs, M.2 storage), fans, power supplies, server ambient and subcomponent temperatures. Alerts can be surfaced through the XClarity Controller to managers such as Lenovo XClarity Administrator, Nutanix Prism or VMware vCenter. These proactive alerts let you take appropriate actions in advance of possible failure, thereby increasing server uptime and application availability.
- The built-in XClarity Controller 2 continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failures to minimize downtime.
- Built-in diagnostics in UEFI, using Lenovo XClarity Provisioning Manager, speed up troubleshooting tasks to reduce service time.
- Lenovo XClarity Provisioning Manager supports diagnostics and can save service data to a USB key drive or remote CIFS share folder for troubleshooting and reduce service time.
- Auto restart in the event of a momentary loss of AC power (based on power policy setting in the XClarity Controller service processor)
- Offers a diagnostics port on the front of the server to allow you to attach an external diagnostics handset for enhanced systems management capabilities.
- Support for the XClarity Administrator Mobile app running on a supported smartphone or tablet and connected to the server through the service-enabled USB port, enables additional local systems management functions.
- Three-year customer-replaceable unit and onsite limited warranty (varies by geography), 9 x 5 next business day. Optional service upgrades are available.

Manageability and security

Systems management features simplify local and remote management of the HX630 V3:

- The server includes XClarity Controller 2 (XCC2) to monitor server availability. Optional upgrade to XCC Platinum to provide remote control (keyboard video mouse) functions, support for the mounting of remote media files (ISO and IMG image files), boot capture, power capping and new XCC2 Platinum features. New XCC2 Platinum features include System Guard, new security modes including a CNSA-compliant mode, FIPS 140-3 and NIST 800-193 support, and a new Neighbor Group feature.
- Dedicated Ethernet port at the rear of the server for remote management (BMC management).
- Lenovo XClarity Administrator offers comprehensive hardware management tools that help to increase uptime, reduce costs and improve productivity through advanced server management capabilities.
- UEFI-based Lenovo XClarity Provisioning Manager, accessible from F1 during boot, provides system inventory information, graphical UEFI Setup, platform update function, RAID Setup wizard, operating system installation function, and diagnostic functions.
- Support for Lenovo XClarity Energy Manager which captures real-time power and temperature data from the server and provides automated controls to lower energy costs.
- An integrated industry-standard Unified Extensible Firmware Interface (UEFI) enables improved setup, configuration, and updates, and simplifies error handling.
- Support for industry standard management protocols, IPMI 2.0, SNMP 3.0, Redfish REST API, serial console via IPMI

- An integrated hardware Trusted Platform Module (TPM) supporting TPM 2.0 enables advanced cryptographic functionality, such as digital signatures and remote attestation.
- Administrator and power-on passwords help protect from unauthorized access to the server.
- Supports Secure Boot to ensure only a digitally signed operating system can be used. Supported with HDDs and SSDs, as well as 7mm and M.2 drives.
- Industry-standard Advanced Encryption Standard (AES) NI support for faster, stronger encryption.
- Intel Execute Disable Bit functionality can prevent certain classes of malicious buffer overflow attacks when combined with a supported operating system.
- Intel Trusted Execution Technology provides enhanced security through hardware-based resistance to malicious software attacks, allowing an application to run in its own isolated space, protected from all other software running on a system.
- Additional physical security features are an available chassis intrusion switch and available lockable front bezel.

Energy efficiency

The HX630 V3 offer the following energy-efficiency features to save energy, reduce operational costs, and increase energy availability:

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

Components and connectors

The ThinkAgile HX630 V3 1U Integrated System & Certified Nodes are based on the ThinkSystem SR630 V3 server.

The following figure shows the front of the HX630 V3 with 2.5-inch drives.

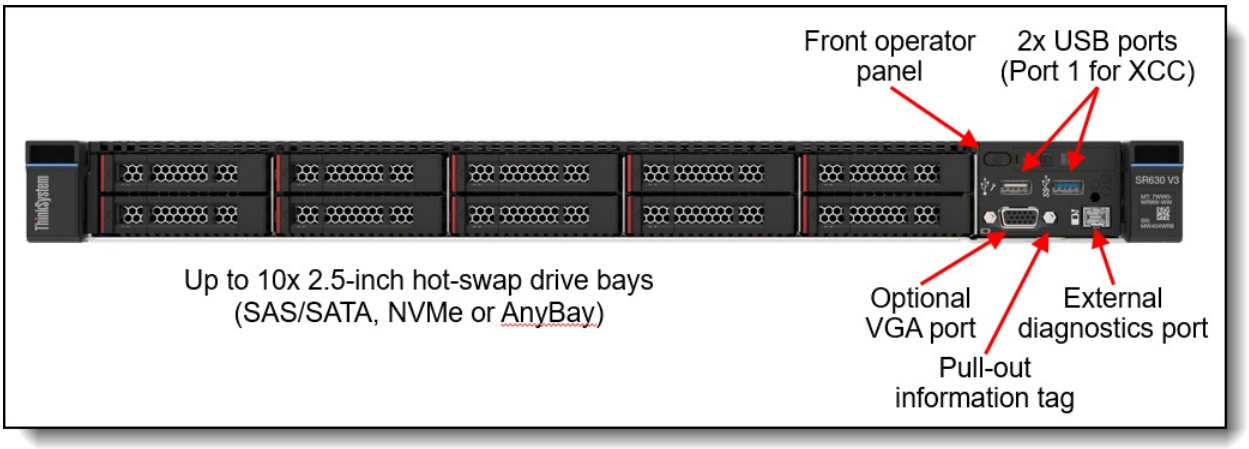

Figure 2. Front view of the HX630 V3 with 2.5-inch drives

The following figure shows the front of the HX630 V3 with 3.5-inch drives.

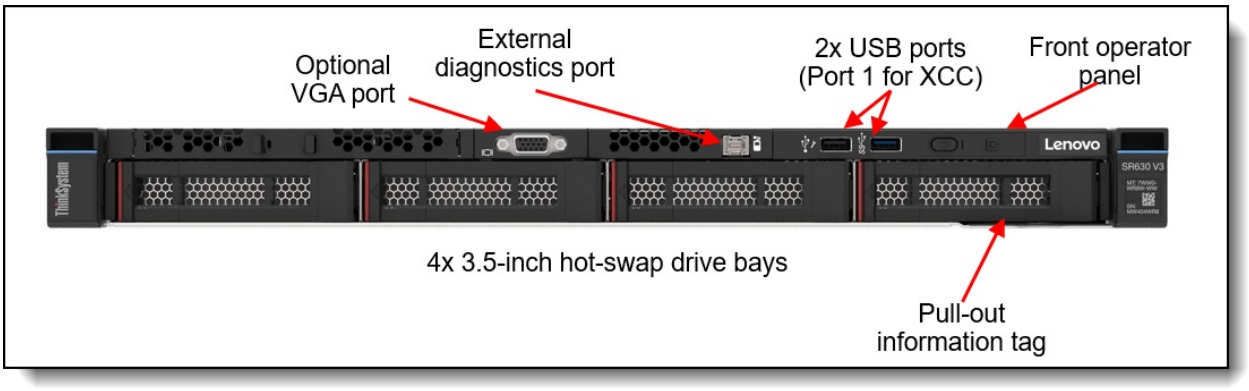

Figure 3. Front view of the HX630 V3 with 3.5-inch drives

The following figure shows the components visible from the rear of the server. As shown, there are three different configurations available, including one with two 2.5-inch hot-swap rear-mounted drive bays.

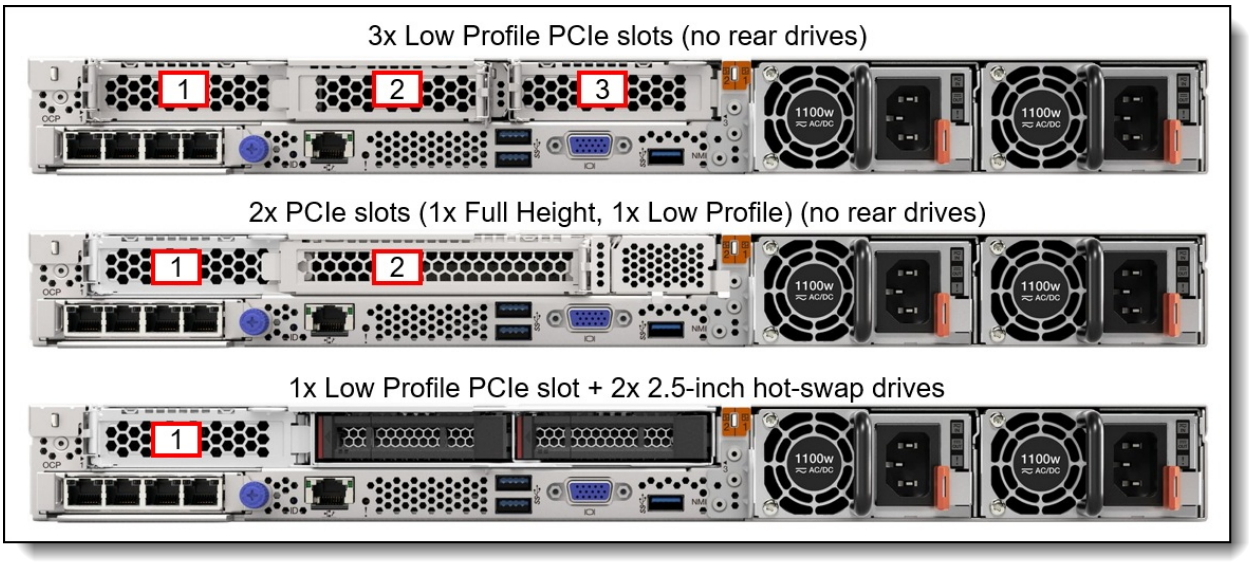

Figure 4. Rear views of the HX630 V3

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

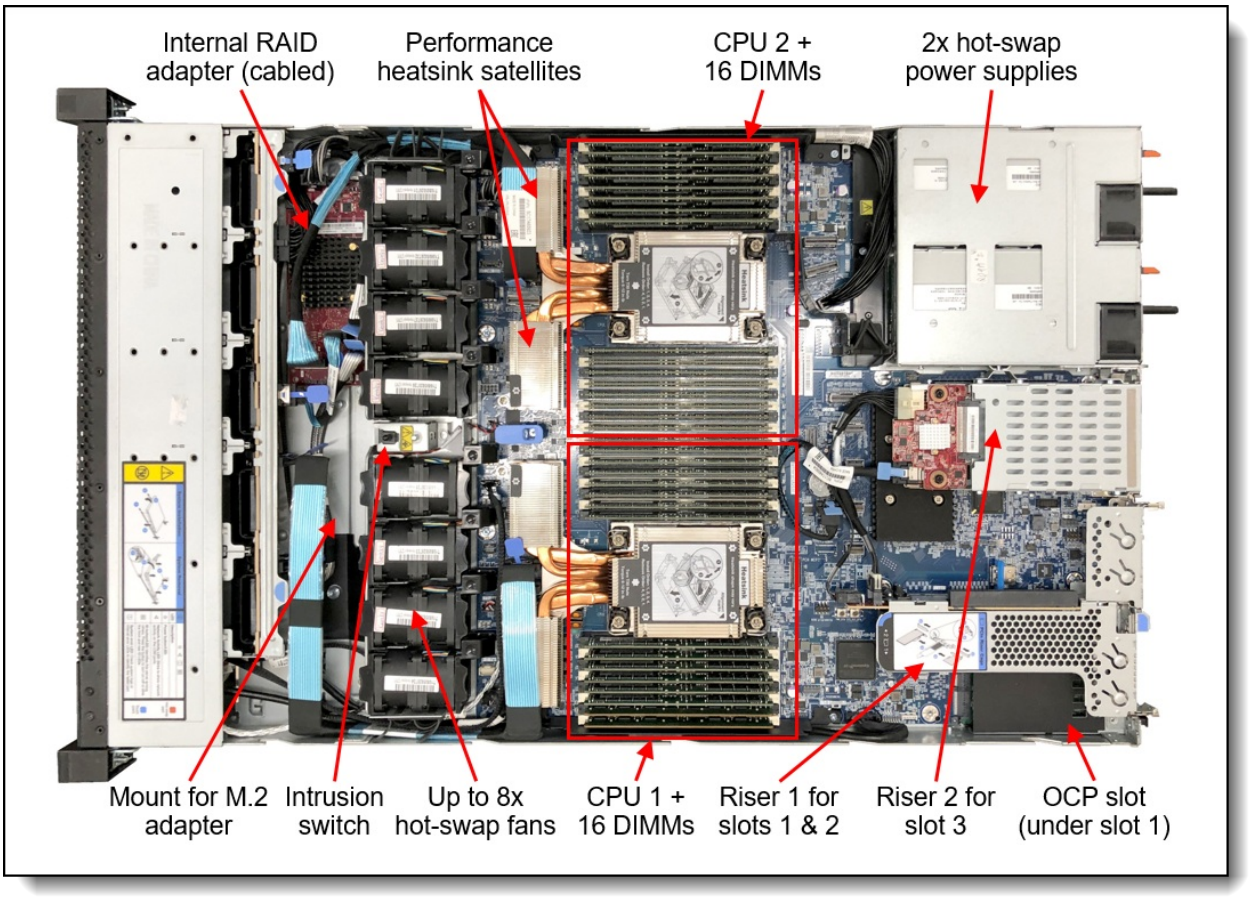

Figure 5. Internal view of the HX630 V3 systems

Standard specifications

The ThinkAgile HX630 V3 1U Integrated System & Certified Nodes are based on the ThinkSystem SR630 V2 server.

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

Table 1. Comparison of features

	HX630 V3 ROBO Integrated System HX630 V3 ROBO Certified Node	**HX630 V3 Integrated System HX630 V3 Certified Node**
HX offering type	Integrated System Certified Node	Integrated System Certified Node
Target workloads	Entry, SMB, ROBO/Edge	VDI, server virtualization, private cloud, general compute
Base MTM	IS: 7D6MCTO2WW CN: 7D6MCTO4WW	IS: 7D6MCTO1WW CN: 7D6MCTO3WW
Form Factor	1U	1U
Base platform	SR630 V3	SR630 V3
CPU	2x Intel Xeon SP Gen 4	2x Intel Xeon SP Gen 4
Memory	32x DDR5 4800 MHz (8TB maximum)	32x DDR5 4800 MHz (8TB maximum)
Drive Bays	4x 3.5" SATA/SAS Front Bays 2x 2.5" Rear Bay (Optional)	10x 2.5" AnyBay Front Bays 2x 2.5" Rear Bay (Optional)
Drive Configuration	All Flash Hybrid	All Flash
HBA	440-8i HBA	440-16i HBA
Boot drives	2x M.2	2x M.2
OCP networking	1x OCP 3.0 adapter 10Gb, 25Gb	1x OCP 3.0 adapter 10Gb, 25Gb
PCIe networking	2x PCIe adapters 10Gb, 25Gb, 100Gb	2x PCIe adapters 10Gb, 25Gb, 100 Gb
GPUs	Up to 2x single-wide GPUs	Up to 2x single-wide GPUs
Hypervisor	Nutanix AHV, VMware ESXi	Nutanix AHV, VMware ESXi

The following table lists the standard specifications.

Table 2. Standard specifications

Components	**Specification**
Machine types	7D6M - 1U Integrated Systems 7D6M - 1U Certified Node
Form factor	1U rack.
Processor	One or two 4th-generation Intel Xeon Scalable processor (formerly codenamed "Sapphire Rapids"). Supports processors up to 60 cores, core speeds of up to 4.0 GHz, and TDP ratings of up to 350 W.
Chipset	Intel C741 "Emmitsburg" chipset, part of the platform codenamed "Eagle Stream"

Components	Specification
Memory	32 DIMM slots with two processors (16 DIMM slots per processor). Each processor has 8 memory channels, with 2 DIMMs per channel (DPC). Lenovo TruDDR5 RDIMMs, 9x4 RDIMMs, and 3DS RDIMMs are supported. DIMM slots are shared between standard system memory and persistent memory. DIMMs operate at up to 4800 MHz at 1 DPC and up to 4400 MHz at 2 DPC.
Persistent memory	Not supported
Memory maximum	With RDIMMs: Up to 8TB by using 32x 256GB 3DS RDIMMs
Memory protection	ECC, SDDC (for x4-based memory DIMMs), ADDDC (for x4-based memory DIMMs excluding 9x4 RDIMMs, requires Platinum or Gold processors), and memory mirroring.

Drive bays	• HX630 V3 ROBO Integrated System and HX630 V3 ROBO Certified Node:
	  ◦ Front drive bays: 4x 3.5-inch SAS/SATA
	  ◦ Rear drive bays: 2x 2.5-inch (optional)
	• HX630 V3 Integrated System and HX630 V3 Certified Node
	  ◦ Front drive bays: 10x 2.5-inch SAS/SATA or 10x 2.5-inch NVMe
	  ◦ Rear drive bays: 2x 2.5-inch (optional)
	• Internal M.2 module supporting up to two M.2 drives, for OS boot support
	Note: EDSFF drive bays are currently not supported.

Storage controller	• Onboard NVMe ports (RAID not supported)
	• 12 Gb SAS/SATA HBA (non-RAID)
	  ◦ 8-port or 16-port
	  ◦ PCIe 4.0 host interface

Network interfaces	Dedicated OCP 3.0 SFF slot with PCIe 5.0 x16 host interface. Supports a variety of 2-port and 4-port adapters with 1GbE, 10GbE and 25GbE network connectivity. One port can optionally be shared with the XClarity Controller 2 (XCC2) management processor for Wake-on-LAN and NC-SI support.
PCI Expansion slots	Up to 3x PCIe 5.0 slots, all with rear access, plus a slot dedicated to the OCP adapter. Slot availability is based on riser selection and rear drive bay selection. Slot 3 requires two processors. Four choices for rear-access slots: • 3x PCIe 4.0 x16 low-profile slots • 1x PCIe 4.0 x16 full-height half-length slot + 1x PCIe 4.0 x16 low-profile slot • 1x PCIe 4.0 x16 low-profile slot (also supports 2x rear 2.5-inch drive bays) • 2x PCIe 4.0 x16 low-profile slot (also supports 2x rear 7mm 2.5-inch drive bays) Customer has option to use with PCIe 5.0 instead of default PCIe 4.0. For 2.5-inch front drive configurations, the server supports the installation of a RAID adapter or HBA in a dedicated area that does not consume any of the PCIe slots. **Note**: Not all slots are available in a 1-processor configuration. See thel/O expansion for details.
GPU support	Supports up to 2x single-wide GPUs

Components	Specification
Ports	Front: 1x USB 3.1 G1 (5 Gb/s) port, 1x USB 2.0 port (also for XCC local management), External diagnostics port, optional VGA port. Rear: 2x USB 3.1 G1 (5 Gb/s) ports and 1x USB 2.0 port, 1x VGA video port, 1x RJ-45 1GbE systems management port for XCC remote management. Optional DB-9 COM serial port (installs in slot 3). Optional second RJ-45 1GbE systems management port for XCC remote management (installed in OCP adapter slot). Internal: 1x USB 3.1 G1 connector for operating system or license key purposes
Cooling	Up to 8x N+1 redundant hot swap 40 mm fans, configuration dependent. One fan integrated in each power supply.
Power supply	Up to two hot-swap redundant AC power supplies, 80 PLUS Platinum or 80 PLUS Titanium certification. 750 W, 1100 W and 1800 W AC options, supporting 220 V AC. 750 W and 1100 W options also support 110V input supply. In China only, all power supply options support 240 V DC. Also available is a 1100W power supply with a -48V DC input.
Video	Embedded graphics with 16 MB memory with 2D hardware accelerator, integrated into the XClarity Controller 2 management controller. Maximum resolution is 1920x1200 32bpp at 60Hz.
Hot-swap parts	Drives, power supplies, and fans.
Systems management	Operator panel with status LEDs. Optional External Diagnostics Handset with LCD display. Models with 8x 2.5-inch front drive bays can optionally support an Integrated Diagnostics Panel. XClarity Controller 2 (XCC2) embedded management based on the ASPEED AST2600 baseboard management controller (BMC), XClarity Administrator centralized infrastructure delivery, XClarity Integrator plugins, and XClarity Energy Manager centralized server power management. Optional XCC Platinum to enable remote control functions and other features.
Security features	Chassis intrusion switch, Power-on password, administrator's password, Root of Trust module supporting TPM 2.0 and Platform Firmware Resiliency (PFR). Optional lockable front security bezel.
Software	• Integrated Systems: Nutanix Acropolis: Starter, Pro, and Ultimate editions. Nutanix Prism, Nutanix Calm (optional), Nutanix Flow (optional). • Nutanix 2.0 PnP: Starter, Pro, and Ultimate editions - Nutanix Cloud Platform, Nutanix Cloud Infrastructure, Nutanix Cloud Manager, NCI-Data • Certified Nodes: Licenses purchased separately from Nutanix or a Nutanix reseller. Nutanix Acropolis Starter, Pro and Ultimate editions . OEM 2.0: Starter, Pro, and Ultimate editions - Nutanix Cloud Platform, Nutanix Cloud Infrastructure, Nutanix Cloud Manager, NCI-Data
Hypervisor	Nutanix AHV or VMware ESXi.

Components	Specification
Hardware warranty	• Integrated Systems: Three-, four-, or five-year customer-replaceable unit and onsite limited hardware warranty with ThinkAgile Premier 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. • Certified Nodes: 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, YourDrive YourData, and Enterprise Software Support.
Software maintenance	Three-, four-, or five-year software support and subscription (matches the duration of the selected warranty period).
Dimensions	Width: 440 mm (17.3 in.), height: 43 mm (1.7 in.), depth: 773 mm (30.4 in.).
Weight	Maximum: 26.3 kg (58 lb)

Models

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

During the configuration process, you are selecting one of the base Configure-to-Order (CTO) models first, and then you are adding components (processors, memory, drives, and network adapters) to the selected model according to the output from the Nutanix Sizer tool, http://services.nutanix.com/

Note: You are required to engage a Lenovo representative in the project that includes the ThinkAgile HX Series Integrated Systems. ThinkAgile HX Certified Nodes do not have this requirement.

The following table lists the base CTO models.

Table 3. Base CTO models

Base model	Description
7D6MCTO1WW	ThinkAgile HX630 V3 Integrated System
7D6MCTO2WW	ThinkAgile HX630 V3 ROBO Integrated System
7D6MCTO3WW	ThinkAgile HX630 V3 Certified Node
7D6MCTO4WW	ThinkAgile HX630 V3 ROBO Certified Node

Comparison with the ThinkSystem SR630 V3

The ThinkAgile HX630 V3 1U Integrated System & Certified Nodes are based on the ThinkSystem SR630 V3 server, however there are key differences:

- No persistent memory support
- No onboard SATA controller support
- RAID adapter support for Boot only
- No VROC RAID support
- No EDSFF drive support
- Encryption not supported on SED drives
- Fibre Channel support for data migration only
- No InfiniBand support

For details about the ThinkSystem SR630 V3, see the SR630 V3 product guide:
https://lenovopress.com/lp1600-thinksystem-sr630-v3-server

To verify what specific hardware components are supported with the HX630 V3, see the DCSC configurator:
https://dcsc.lenovo.com

Processors

The HX630 V3 support the following processors.

For details about these options, see the SR630 V3 product guide:
https://lenovopress.com/lp1600-thinksystem-sr630-v3-server#processors

Support for additional processors: The table below lists the processors supported across all configurations. Additional processors may also be supported. Please contact your Lenovo representative regarding the support of additional options through our Special Bid ordering process.

Configurations rules regarding processor quantities:

- HX630 V3 Integrated System and Certified Node support 1 or 2 processors
- HX630 V3 ROBO Integrated System and Certified Node support 1 or 2 processors

Table 4. Processors

Feature	Description	Maximum supported			
		HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
BQ68	Intel Xeon Bronze 3408U 8C 125W 1.8-1.9GGHz Processor	No	1	No	1
BQ64	Intel Xeon Silver 4410T 10C 150W 2.7-3.4GHz Processor	2	2	2	2
BQ67	Intel Xeon Silver 4410Y 12C 150W 2.0-2.9GHz Processor	2	2	2	2
BQ69	Intel Xeon Silver 4416+ 20C 165W 2.0-2.9GHz Processor	2	2	2	2
BQ6J	Intel Xeon Gold 5411N 24C 165W 1.9-2.8GHz Processor	No	1	No	1
BQ63	Intel Xeon Gold 5415+ 8C 150W 2.9-3.6GHz Processor	2	2	2	2
BQ6L	Intel Xeon Gold 5416S 16C 150W 2.0-2.8GHz Processor	2	2	2	2
BQ6H	Intel Xeon Gold 5418N 24C 165W 1.8-2.6GHz Processor	2	2	2	2
BQ66	Intel Xeon Gold 5418Y 24C 185W 2.0-2.8GHz Processor	2	2	2	2
BQ65	Intel Xeon Gold 5420+ 28C 205W 2.0-2.7GHz Processor	2	2	2	2
BPPD	Intel Xeon Gold 6414U 32C 250W 2.0-2.6GHz Processor	No	1	No	1
BQ6C	Intel Xeon Gold 6416H 18C 165W 2.2-2.9GHz Processor	2	2	2	2
BQ6B	Intel Xeon Gold 6418H 24C 185W 2.1-2.9GHz Processor	2	2	2	2
BQ6G	Intel Xeon Gold 6421N 32C 185W 1.8-2.6GHz Processor	No	1	No	1
BPQF	Intel Xeon Gold 6426Y 16C 185W 2.5-3.3GHz Processor	2	2	2	2
BQ6F	Intel Xeon Gold 6428N 32C 185W 1.8-2.5GHz Processor	2	2	2	2
BPPC	Intel Xeon Gold 6430 32C 270W 2.1-2.6GHz Processor	2	2	2	2
BPQC	Intel Xeon Gold 6434 8C 195W 3.7-4.1GHz Processor	2	2	2	2
BQ6E	Intel Xeon Gold 6434H 8C 195W 3.7-4.1GHz Processor	2	2	2	2
BQ6K	Intel Xeon Gold 6438M 32C 205W 2.2-2.8GHz Processor	2	2	2	2
BQ6D	Intel Xeon Gold 6438N 32C 205W 2.0-2.7GHz Processor	2	2	2	2

Feature	Description	Maximum supported			
		HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
BQ62	Intel Xeon Gold 6438Y+ 32C 205W 2.0-2.8GHz Processor	2	2	2	2
BPQE	Intel Xeon Gold 6442Y 24C 225W 2.6-3.3GHz Processor	2	2	2	2
BPQB	Intel Xeon Gold 6444Y 16C 270W 3.6-4.0GHz Processor	2	2	2	2
BQ6A	Intel Xeon Gold 6448H 32C 250W 2.4-3.2GHz Processor	2	2	2	2
BPQD	Intel Xeon Gold 6448Y 32C 225W 2.1-3.0GHz Processor	2	2	2	2
BPPM	Intel Xeon Gold 6454S 32C 270W 2.2-2.8GHz Processor	2	2	2	2
BPPH	Intel Xeon Platinum 8444H 16C 270W 2.9-3.2GHz Processor	2	2	2	2
BPPG	Intel Xeon Platinum 8450H 28C 250W 2.0-2.6GHz Processor	2	2	2	2
BPPB	Intel Xeon Platinum 8452Y 36C 300W 2.0-2.8GHz Processor	2	2	2	2
BPPF	Intel Xeon Platinum 8454H 32C 270W 2.1-2.7GHz Processor	2	2	2	2
BPPT	Intel Xeon Platinum 8458P 44C 350W 2.7-3.2GHz Processor	2	2	2	2
BPPN	Intel Xeon Platinum 8460H 40C 330W 2.2-3.1GHz Processor	2	2	2	2
BPPQ	Intel Xeon Platinum 8460Y+ 40C 300W 2.0-2.8GHz Processor	2	2	2	2
BPPK	Intel Xeon Platinum 8461V 48C 300W 2.2-2.8GHz Processor	No	1	No	1
BPQA	Intel Xeon Platinum 8462Y+ 32C 300W 2.8-3.6GHz Processor	2	2	2	2
BPPU	Intel Xeon Platinum 8468 48C 350W 2.1-3.1GHz Processor	2	2	2	2
BPPE	Intel Xeon Platinum 8468H 48C 330W 2.1-3.0GHz Processor	2	2	2	2
BPPP	Intel Xeon Platinum 8468V 48C 330W 2.4-2.9GHz Processor	2	2	2	2
BN0N	Intel Xeon Platinum 8470 52C 350W 2.0-3.0GHz Processor	2	2	2	2
BPPJ	Intel Xeon Platinum 8470N 52C 300W 1.7-2.7GHz Processor	2	2	2	2
BPPR	Intel Xeon Platinum 8471N 52C 300W 1.8-2.8GHz Processor	No	1	No	1
BN0M	Intel Xeon Platinum 8480+ 56C 350W 2.0-3.0GHz Processor	2	2	2	2
BPPS	Intel Xeon Platinum 8490H 60C 350W 1.9-2.9GHz Processor	2	2	2	2

Memory

The HX630 V3 support the following memory options.

For details about these options, see the SR630 V3 product guide:
https://lenovopress.com/lp1600-thinksystem-sr630-v3-server#memory-options

Table 5. Memory

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
RDIMMs						
4X77A77029	BKTL	ThinkSystem 16GB TruDDR5 4800MHz (1Rx8) RDIMM	32	32	32	32
4X77A77030	BNF6	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 10x4 RDIMM	32	32	32	32
4X77A77031	BKTM	ThinkSystem 32GB TruDDR5 4800MHz (2Rx8) RDIMM	32	32	32	32
4X77A77033	BKTN	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 9x4 RDIMM	32	32	32	32
4X77A77032	BNF9	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 10x4 RDIMM	32	32	32	32
3DS RDIMMs						
4X77A77034	BNFC	ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM	32	32	32	32
4X77A77035	BNF8	ThinkSystem 256GB TruDDR5 4800MHz (8Rx4) 3DS RDIMM	32	32	32	32

Internal storage

Internal storage configurations of the HX630 V3 are as follows. All drives are hot-swap and are accessible from the front or rear of the system:

- HX630 V3 Integrated System and Certified Node:
  - Front: 10x 2.5" SAS/SATA + optional 8x 2.5" AnyBay
  - Rear: 2x 2.5-inch hot-swap bays
- HX630 V3 ROBO Integrated System and Certified Node:
  - Front: 4x 3.5" SAS/SATA
  - Rear: 2x 2.5-inch hot-swap bays
- The systems also support the following boot drive alternatives:
- M.2 drives in an M.2 adapter that is internal to the server

Note: EDSFF drives are not supported in HX630 V3.

Configuration rules

Configuration rules are as follows:

- For hybrid configurations, the system supports from 4 to 10 capacity drives (HDDs) depending on the quantity of the cache drives (SSDs):
  - 2 cache drives: From 4 to 10 capacity drives in increments of 2 drives
  - 4 cache drives: 8 capacity drives

- For All Flash configurations, the system supports from 2 to 12 capacity drives (SAS or SATA SSDs) depending on the quantity of the cache drives (NVMe PCIe SSDs):
  - 2 cache drives: From 4 to 10 capacity drives in increments of 2 drives
  - 4 cache drives: 8 capacity drives
- For Hybrid configurations, SATA and SAS SSDs are supported for cache, however NVMe drives are not supported for cache.
- All SSDs in the system must be of the same model and capacity. All HDDs in the system must be of the same type and capacity.
- The M.2 drives are used for software preload. Two SATA drives are required for selection, and they must be of the same part number.

Backplanes

The choice of backplanes supported varies by system, as listed in the following table.

For details about these options, including configuration rules, see the SR630 V3 product guide: https://lenovopress.com/lp1600-thinksystem-sr630-v3-server#internal-storage

Table 6. Drive backplanes

Feature	Description	Maximum supported			
		HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
Front 3.5-inch drive backplanes					
B8L3	ThinkSystem 1U/2U 4x3.5" SAS/SATA Backplane	No	1	No	1
Front 2.5-inch drive backplanes					
BB3T	ThinkSystem 1U 10x2.5" AnyBay Backplane	1	No	1	No
BCQQ	ThinkSystem 1U 10x2.5" NVMe Backplane	1	No	1	No
Rear - 2.5-inch drive backplanes					
B8MY	ThinkSystem 1U 2x2.5" SAS/SATA Rear Backplane	1	1	1	1
BDY6	ThinkSystem 1U 2x2.5" NVMe Rear Backplane	1	No	1	No

Boot drive enablement

For OS boot functions, the systems also support either two 7mm hot-swap drive bays installed at the rear of the server (mutually exclusive with the 2.5-inch hot-swap rear drive bays), or two M.2 drives installed on an adapter internal to the server. The following table lists the supported controllers/enablement kits for boot drives.

For details about these options, including configuration rules, see the SR630 V3 product guide: https://lenovopress.com/lp1600-thinksystem-sr630-v3-server#internal-storage

Table 7. Boot drive enablement

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
4Y37A79663	BM8X	ThinkSystem M.2 SATA/x4 NVMe 2-Bay Enablement Kit	1	1	1	1

Controllers for internal storage

The HX630 V3 support the following internal storage controllers.

For details about these options, see the SR630 V3 product guide:
https://lenovopress.com/lp1600-thinksystem-sr630-v3-server#controllers-for-internal-storage

Table 8. Controllers for internal storage

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
SAS/SATA HBA - PCIe 4.0						
4Y37A78601	BM51	ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA	No	1	No	1
4Y37A78602	BM50	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA	1	No	1	No

Internal drive options

The following table lists the supported drive options for the HX630 V3.

Table 9. Internal drive options

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
2.5-inch hot-swap 24Gb SAS SSDs						
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	12	2	12	2
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	12	2	12	2
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	12	No	12	No
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	12	2	12	2
2.5-inch hot-swap 6 Gb SATA SSDs						
4XB7A72440	BM89	ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD	12	2	12	2
4XB7A72441	BM88	ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD	12	2	12	2
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	12	2	12	2
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	12	2	12	2
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	12	2	12	2
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	12	2	12	2
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	12	2	12	2
2.5-inch hot-swap PCIe 4.0 NVMe SSDs						
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A13942	BMGE	ThinkSystem 2.5" U.2 P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A13943	BNEF	ThinkSystem 2.5" U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A79647	BNF2	ThinkSystem 2.5" U.3 7450 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	8	No	12	No
4XB7A79648	BNF5	ThinkSystem 2.5" U.3 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	8	No	12	No
4XB7A79649	BNF4	ThinkSystem 2.5" U.3 7450 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	No	12	No

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
4XB7A17130	BNEH	ThinkSystem 2.5" U.2 P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A17133	BNEZ	ThinkSystem 2.5" U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A13967	BNEJ	ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A13970	BNEY	ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	12	No	12	No
4XB7A13971	BNEL	ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	8	No	12	No
3.5-inch hot-swap 12 Gb SAS HDDs						
7XB7A00046	AUUG	ThinkSystem 3.5" 10TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4	No	4
7XB7A00067	B117	ThinkSystem 3.5" 12TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4	No	4
4XB7A80353	BPKU	ThinkSystem 3.5" 20TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	4	No	4
3.5-inch hot-swap 6 Gb SATA HDDs						
7XB7A00051	AUU8	ThinkSystem 3.5" 4TB 7.2K SATA 6Gb Hot Swap 512n HDD	No	4	No	4
7XB7A00052	AUUA	ThinkSystem 3.5" 6TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4	No	4
7XB7A00053	AUU9	ThinkSystem 3.5" 8TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4	No	4
7XB7A00054	AUUB	ThinkSystem 3.5" 10TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4	No	4
7XB7A00068	B118	ThinkSystem 3.5" 12TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4	No	4
4XB7A13914	B7F0	ThinkSystem 3.5" 16TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	4	No	4
3.5-inch hot-swap 24 Gb SAS SSDs						
4XB7A80345	BNWA	ThinkSystem 3.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	No	4	No	4
4XB7A80326	BNWH	ThinkSystem 3.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	4	No	4
4XB7A80327	BP3F	ThinkSystem 3.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	4	No	4
3.5-inch hot-swap 6 Gb SATA SSDs						
4XB7A17121	BA7N	ThinkSystem 3.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	4	No	4
4XB7A17122	BK7F	ThinkSystem 3.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	4	No	4
4XB7A17138	BA4X	ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	4	No	4
4XB7A17139	BA4Y	ThinkSystem 3.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	No	4	No	4
4XB7A17140	BK7P	ThinkSystem 3.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	No	4	No	4
M.2- 6 Gb SATA SSDs						
4XB7A82286	BQ1Z	ThinkSystem M.2 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD	2	2	2	2

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
4XB7A82287	BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	2	2	2	2
4XB7A13999	BKSR	ThinkSystem M.2 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2	2	2	2

Network adapters

The HX630 V3 support the following networking options.

For details about the implementation of these networking options, see the SR630 V3 product guide:
https://lenovopress.com/lp1600-thinksystem-sr630-v3-server#i-o-expansion
https://lenovopress.com/lp1600-thinksystem-sr630-v3-server#network-adapters

Mixing vendors is not supported : HX configurations only support network adapters from one vendor. For example, if you select a Broadcom OCP adapter, you cannot select a Mellanox PCIe network adapter.

Table 10. OCP network adapters

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
10 Gb Ethernet						
4XC7A08240	B5T4	ThinkSystem Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter	1	1	1	1
25 Gb Ethernet						
4XC7A08237	BN2T	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1	1	1	1
4XC7A80567	BPPW	ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port OCP Ethernet Adapter	1	1	1	1
4XC7A62582	BE4T	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1	1	1	1

Table 11. PCIe network adapters

Part number	Feature	Description	Maximum supported			
			HX630V3 IS	HX630V3 ROBO IS	HX630V3 CN	HX630V3 ROBO CN
4XC7A08245	B5SU	ThinkSystem Broadcom 57454 10GBASE-T 4-port PCIe Ethernet Adapter	2	1	2	1
25 Gb Ethernet						
4XC7A80566	BNWM	ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	1	1	1	1
4XC7A62580	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	2	1	2	1
100 Gb Ethernet						
4XC7A08248	B8PP	ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter	2	1	2	1

Note: ThinkSystem Mellanox ConnectX-6 is the only adapter enabled for RDMA, minimum required quantity is two.

Software

The systems support the hypervisors listed in the following table. Hypervisors are installed on the 2x M.2 SSDs configured in a RAID-1 drive group.

Table 12. Hypervisors

Feature code	Description	Quantity
B15S	Nutanix SW Stack on Nutanix AHV	1
BFT6	Nutanix SW Stack on VMware ESXi 7.0	1

Configuration notes:

- In ESXi-based environments, HX Series Appliances require VMware vCenter Server.
- The HX systems support firmware updates from Nutanix with the ThinkAgile HX Lifecycle Manager (UEFI, XCC2, drives, network adapters, and SAS HBAs)

Nutanix licenses on certified nodes: The certified node ships with the Nutanix software preloaded, however Nutanix software licenses and software support are not included. Customers can use the existing Nutanix term-based software licenses and active support contracts, or they can purchase term-based software licenses and support contracts from Nutanix.

For the information on appliance firmware levels, hypervisor versions, and software versions that have been tested for interoperability, refer to the Lenovo ThinkAgile HX Series Best Recipes: http://datacentersupport.lenovo.com/us/en/solutions/ht505413

Nutanix Portfolio 2.0 (PnP) Licensing Model

Nutanix is introducing an enterprise-ready unified cloud platform with our HCI solution as the foundation. The new, simplified product portfolio includes: Nutanix Cloud Platform (NCP), Nutanix Cloud Infrastructure (NCI) and Nutanix Cloud Manager (NCM), NCI-Data with 3 license tiers for each software edition. There are additional packages, Nutanix Unified Storage, Nutanix Database Service (NDB), and Nutanix Desktop Services (NDS), Virtual Desktop Infrastructure (VDI) & Nutanix Frame that are available.

The Nutanix software is available for all base CTO models.

The editions have the following characteristics:

Table 13. Software Editions

License Tier	Nutanix Cloud Platform (NCP)	Nutanix Cloud Infrastructure (NCI)	Nutanix Cloud Manager (NCM)	NCI-Data
Ultimate	• NCI Ultimate • NCM Ultimate	• Advanced DR: Sync, Near-Sync, • Runbook Security: Micro-segmentation, Encryption • Cloud Native: Kubernetes Services	• Application Automation • Security General	• No Mseg • No Karbon
Pro	• NCI Ultimate • NCM Pro	• Multisite Async DR • Overlay Networking	• Self Service Cost Governance	• No Flow Networking
Starter	• NCI Pro • NCM Pro	• AOS Storage + Compression + Dedup	• AI Operations	• No AHV Support

Nutanix Cloud Platform (NCP)

Nutanix Cloud Platform is the complete software edition package that includes both Nutanix Cloud Infrastructure (NCI) and Nutanix Cloud Manager (NCM). It is available in several editions to meet your infrastructure needs with the right set of capabilities.

Nutanix Cloud Infrastructure (NCI)

Nutanix Cloud Infrastructure (NCI) is a complete software stack to unify your hybrid cloud infrastructure including compute, storage and network, hypervisors and containers, in public or enterprise clouds; all with built-in resilience, self-healing, disaster recovery capabilities, and security. It includes enterprise data services and consolidated storage, data protection and disaster recovery, native virtualization and container management, networking and security.

For details on software editions see https://www.nutanix.com/products/cloud-platform/software-options#nci

Nutanix Cloud Manager (NCM)

Nutanix Cloud Manager (NCM) offers our customers simplicity and ease of use to build and grow their cloud deployments faster and realize rapid ROI, by providing intelligent operations, self service and orchestration, visibility and governance of spend, security and teams, all through a unified Multi-cloud management solution.

For details on software editions see https://www.nutanix.com/products/cloud-platform/software-options#ncm

Nutanix Unified Storage

Nutanix Unified Storage provides software-defined, scale-out storage solutions for enterprise NAS and object workloads for unstructured data, block storage for structured data, and backup storage. Nutanix Unified Storage replaces traditional independent storage services and brings NAS, object, and block workloads into a consolidated unified storage platform with all its benefits, including a unified control plane.

Nutanix Data Lens delivers cloud-based data governance for unstructured data stored in the Nutanix Unified Storage platform, including data lifecycle management, data security, ransomware protection, and audit compliance.

Nutanix Unified Storage and Data Lens are purchased and licensed on a per TiB usable basis.

For details on software editions see https://www.nutanix.com/products/cloud-platform/software-options#nus

Nutanix Database Service

Nutanix Database Service (NDB) is a Hybrid Multicloud DBaaS that enables small, nimble teams of DBAs to easily manage large fleets of databases using a single console and API, while enabling developers to self-service their database requests. NDB is purchased and licensed on a per core basis and is available either as a standalone or as an add-on to NCI. In the standalone version, NDB includes NCI Ultimate functionality in addition to database-specific capabilities and is licensed on a per-core basis.

For details on software editions see https://www.nutanix.com/products/cloud-platform/software-options#database

Nutanix Virtual Desktop Infrastructure (VDI) & Nutanix Frame

The Nutanix VDI per user model offers hybrid cloud infrastructure capabilities appropriate for on-prem virtual desktop infrastructure (VDI) and Desktop as a Service (DaaS) use cases with pricing based on a Maximum Concurrent User basis (maximum number of provisioned end-user VMs). VDI per user is an alternative to the core-based NCI licensing option and is designed to provide simple, transparent licensing for all VDI users, regardless of the underlying hardware, hypervisor, or cloud.

- Agnostic: Works with any EUC management platform including Citrix Virtual Apps & Desktops and VMware Horizon
- Term license: 1-year through 5-year options
  - Term license must run on a dedicated software licensed VDI cluster with no core-based licensing. Mixing of non-VDI workloads is not supported.
- Unified Storage: Built-in and also available as a per TiB base add-on
- No additional license cost for DR site
- Portable across on-premises and public cloud, public cloud use requires Ultimate edition
- Available in Starter, Pro, and Ultimate editions
- Cloud Native and Database Service Add-ons not available with NCI VDI. Advanced Replication and Security Add-on features require NCI Ultimate edition

For details on software editions see https://www.nutanix.com/products/cloud-platform/software-options#vdi

License Options

ThinkAgile HX can be configured with one of the latest Nutanix software editions that are listed in the following table.

Table 14. Nutanix license options

Feature code	Description	Quantity (per node)
BVKU	Nutanix Cloud Platform Starter Edition	1
BVKW	Nutanix Cloud Platform Pro Edition	1
BVKY	Nutanix Cloud Platform Ultimate Edition	1
BSPJ	Nutanix Cloud Infrastructure Starter Edition	1
BSPG	Nutanix Cloud Infrastructure Pro Edition	1
BSPL	Nutanix Cloud Infrastructure Ultimate Edition	1
BSQ0	Nutanix Cloud Manager Starter Edition	1
BSPY	Nutanix Cloud Manager Pro Edition	1
BSQ2	Nutanix Cloud Manager Ultimate Edition	1
BSPQ	NCI-Data Starter Edition	1
BSPN	NCI-Data Pro Edition	1
BSPS	NCI-Data Ultimate Edition	1

Warranty and Support

The ThinkAgile HX Series Integrated Systems can be configured with a three-, four, or five-year hardware warranty with 24x7 ThinkAgile Advantage Single Point of Support (Lenovo appliance hardware and Nutanix software) 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 Nutanix, on behalf of the customer, for software-related problem determination. Nutanix will contact the customer and will own the software-related problem resolution until closure.

For more information refer to the Lenovo Support Plan - ThinkAgile HX Integrated Systems and Lenovo Converged HX Series
https://datacentersupport.lenovo.com/us/en/solutions/ht505404

The ThinkAgile HX Certified Nodes can be configured with three-, four, or five-year hardware warranty and various levels of service coverage with a well-defined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

The base warranty provides 9x5 Next Business Day response with parts delivered. Lenovo’s additional support services provide a sophisticated, unified support structure for a customer's data center, with an experience consistently ranked number one in customer satisfaction worldwide.

For more information refer to the Lenovo Support Plan - ThinkAgile HX Certified Nodes
https://support.lenovo.com/us/en/solutions/HT510301

Hardware warranty

The ThinkAgile HX630 V3 1U Integrated System & Certified Nodes have a 3-year warranty:

- 7D6M - 1U Integrated System - 3 year warranty
- 7D6M - 1U Certified Node - 3 year warranty

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

Deployment services

The following optional Lenovo Professional Services are available to get customers up and running quickly.

- Basic Hardware Installation Services
  - Unpacking and inspecting the systems
  - Installing options and 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)
- Nutanix deployment services - Base (per node)
    - Conducting remote preparation and planning
    - Verifying firmware versions and performing firmware updates, if needed
    - Installing and configuring hypervisor and Nutanix controller VM
    - Creating Nutanix cluster
    - Configuring storage
    - Configuring administrative features
- Nutanix deployment services - Advanced (per cluster)
    - Configuring and integrating a virtualized environment
        - Nutanix containers and Acropolis (AHV) cluster
        - VMware vCenter Server and vSphere cluster (for VMware installations)
    - Transferring knowledge
- Nutanix deployment services - Advanced with XClarity (per cluster)
    - Nutanix deployment services - Advanced
    - Installing Lenovo XClarity
    - Configuring Lenovo XClarity network settings and performing discovery and inventory
    - Installing system updates

The following table lists ThinkAgile Health Check & Deployment offerings are available for ThinkAgile HX 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.

Note: For custom Hardware Installation and Deployment Services, please contact the Lenovo Professional Services team for sizing and pricing.

Table 15. Deployment offerings

Part number	Description
Onsite deployment services	
5MS7B00043	ThinkAgile HX Onsite Deployment (up to 3 nodes)
5MS7B00044	ThinkAgile HX Onsite Deployment (additional node)
Remote deployment services	
5MS7B00045	ThinkAgile HX Remote Deployment (up to 3 nodes)
5MS7B00046	ThinkAgile HX Remote Deployment (additional node)
5MS7A27430	ThinkAgile HX SAP HANA Deployment - Custom
Remote Health Check	
5MS7B00065	ThinkAgile HX 1X Remote Health Check (up to 3 node cluster)
5MS7B00066	ThinkAgile HX 1X Remote Health Check (additional node)
5MS7B00067	ThinkAgile HX 1X Remote Health Check & Update (up to 3 node cluster)
5MS7B00068	ThinkAgile HX 1X Remote Health Check & Update (additional node)

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

Lenovo Financial Services

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

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

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

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

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

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

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

Related publications and links

For more information, see these resources:

- Lenovo ThinkAgile HX Series
  https://www.lenovo.com/us/en/data-center/software-defined-infrastructure/ThinkAgile-HX-Series/p/WMD00000326
- ThinkAgile HX Series Comparison reference
  https://lenovopress.com/lp1336-thinkagile-hx-series-comparison
- Interactive 3D Tour of ThinkAgile HX Series offerings:
  https://lenovopress.com/lp0454-lenovo-thinkagile-hx-series-interactive-3d-tour
- Lenovo Data Center Solution Configurator (DCSC):
  http://dcsc.lenovo.com
- Lenovo ThinkAgile product publications (user manuals):
  https://thinkagile.lenovofiles.com/help/index.jsp
- Nutanix documentation
  http://portal.nutanix.com/#/page/docs
- Lenovo ThinkAgile HX Series Best Recipes
  http://datacentersupport.lenovo.com/us/en/solutions/ht505413
- Lenovo Data Center Support
  http://datacentersupport.lenovo.com

Related product families

Product families related to this document are the following:

- 2-Socket Rack Servers
- ThinkAgile HX Series for Nutanix

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