



## Key features

Combining performance and flexibility, the HX650 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.

## Integrated System features

The HX Integrated Systems Series, HX650 V3 IS, HX650 V3 Storage IS and HX650 v3 IS for SAP HANA offer the following key features:

- Factory-integrated, pre-configured ready-to-go integrated systems 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 Premier 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, HX650 V3 CN, HX650 V3 Storage CN and HX650 v3 CN for SAP HANA 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 HX650 V3 delivers the following key features:

- Mission-critical performance and ultra-reliability of Lenovo's platforms married with the dramatic efficiency and cost savings of the industry-leading Nutanix Enterprise Cloud OS .
- Certified to run SAP HANA in production on Lenovo hyperconverged infrastructure.
- 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 HX systems are based on the SR650 V3 and have the following hardware features:

## Scalability and performance

The HX650 V3 offer numerous features to boost performance, improve scalability and reduce costs:

- Supports one or two Intel Xeon Processor Scalable processors
  - Fifth Generation
    - Up to 64 cores and 128 threads
    - Core speeds of up to 3.9 GHz
    - TDP ratings of up to 350 W
  - Fourth Generation
    - Up to 60 cores and 120 threads
    - Core speeds of up to 3.7 GHz
    - TDP ratings of up to 350 W
- Support for DDR5 memory DIMMs to maximize the performance of the memory subsystem:
  - Up to 32 DDR5 memory DIMMs, 16 DIMMs per processor
  - 8 memory channels per processor (2 DIMMs per channel)
  - Supports 1 DIMM per channel operating at 5600 MHz (5th Gen processors) or 4800 MHz (4th Gen processors)
  - Supports 2 DIMMs per channel operating at 4800 MHz (5th Gen processors) or 4400 MHz (4th Gen processors)
  - Using 256GB 3DS RDIMMs, the server supports up to 8TB of system memory
- Supports up to 8 single-width GPUs or 3 double-wide GPUs, for substantial processing power in a 2U system.
- Supports up to 40x 2.5-inch hot-swap drive bays, by using combinations of front-accessible (up to 24 bays), mid bays (8 bays) and rear-accessible (8 bays).
- Configurations with 3.5-inch drives support up to 12x 3.5-inch hot-swap front-accessible drives plus 4x 3.5-inch hot-swap rear-accessible drives and 4 x 3.5-inch hot swap mid bays.
- Supports 24x NVMe drives without oversubscription of PCIe lanes (1:1 connectivity) . The use of NVMe drives maximizes drive I/O performance, in terms of throughput and latency.
- Supports 12x SATA drives using the onboard SATA controller (no additional adapter needed), enabling lower cost, high capacity storage solution for cold or archival storage workloads.
- Available M.2 RAID Boot Adapters support RAID-1 which can enable two NVMe M.2 drives to be configured as a redundant pair. SATA is only supported for non-RAID boot
- The server has a dedicated industry-standard OCP 3.0 small form factor (SFF) slot, with a PCIe 4.0 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 eight PCIe 5.0 slots, all with rear access, plus a slot dedicated to the OCP adapter.

## Availability and serviceability

The HX650 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. Note: ADDDC is not supported with 9x4 RDIMMs.
- Available M.2 RAID Boot Adapters support RAID-1 which can enable two NVMe M.2 drives to be configured as a redundant pair. SATA is only supported for non-RAID boot
- The server has up to two hot-swap redundant power supplies and up to six hot-swap redundant fans to provide availability for business-critical applications.
- 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.
- Supports a new dedicated Firmware and Root of Trust Security Module that stores all system firmware settings, making it easier to transfer customer settings in the event of a system board replacement, while still maintaining data security
- 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, flash storage adapters), fans, power supplies, server ambient and subcomponent temperatures. Alerts can be surfaced through the XClarity Controller to managers such as Lenovo XClarity Administrator, VMware vCenter, and Microsoft System Center. These proactive alerts let you take appropriate actions in advance of possible failure, thereby increasing server uptime and application availability.
- 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 or one-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 HX650 V3:

- The server includes XClarity Controller 2 (XCC2) to monitor server availability. Included upgrade to XCC2 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.
- 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, 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, 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 HX650 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 HX650 V3 2U Integrated Systems & Certified Nodes are based on the ThinkSystem SR650 V3 server.

The following figure shows the front of the HX650 V3 with 2.5-inch drives.

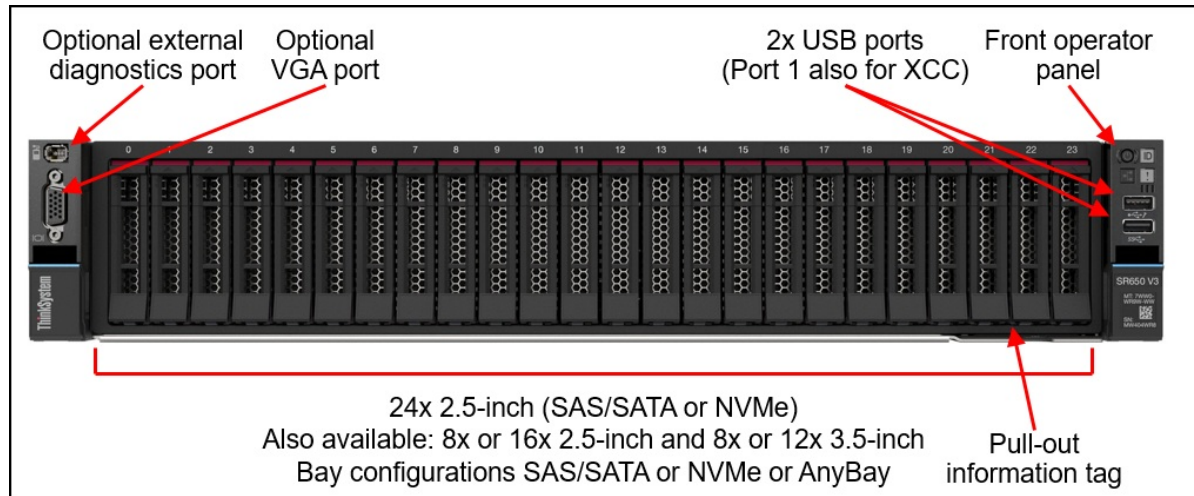


Figure 2. Front view with 2.5-inch drives

The following figure shows the front of the HX650 V3 with 3.5-inch drives.

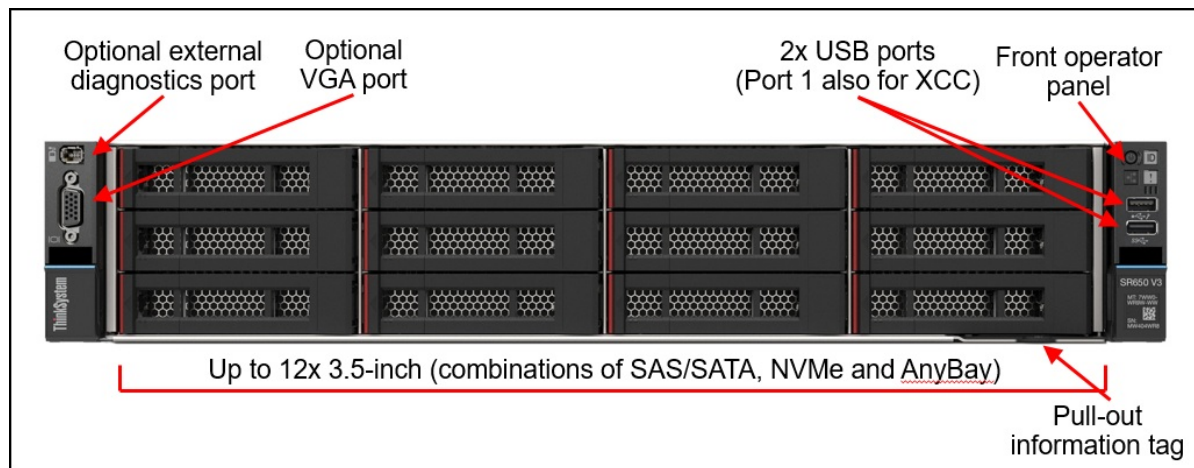


Figure 3. Front view with 3.5-inch drives



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

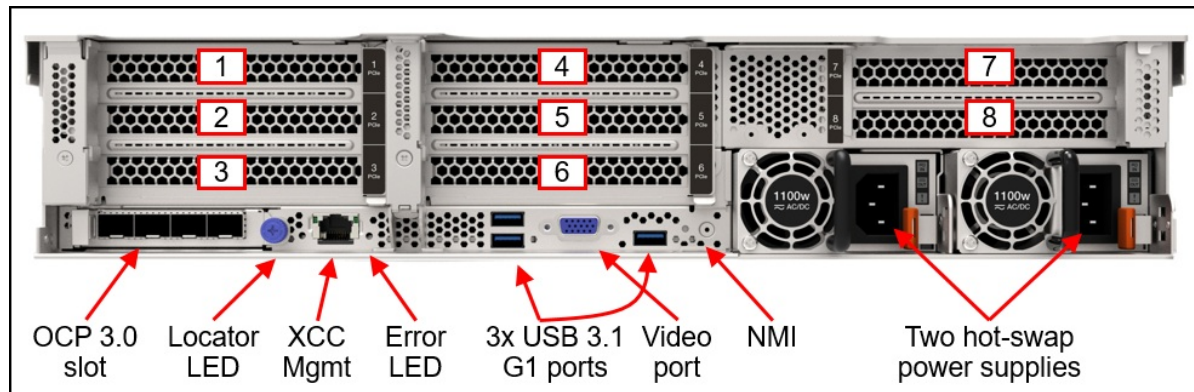


Figure 4. Rear view of the HX systems (configuration with eight PCIe slots)

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

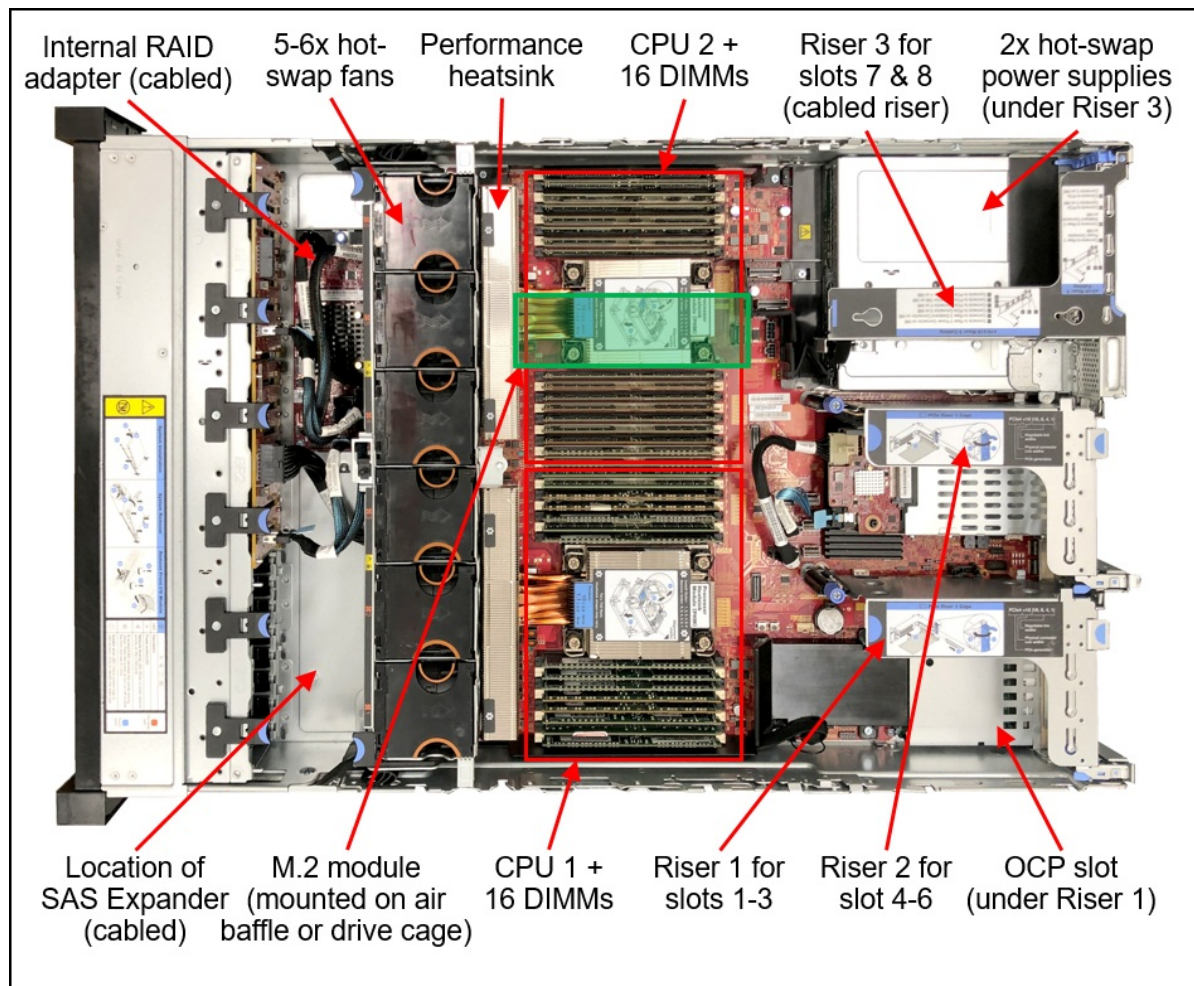


Figure 5. Internal view of the HX650 V3 systems

## Standard specifications

The ThinkAgile HX650 V3 2U Integrated Systems & Certified Nodes are based on the ThinkSystem SR650 V3 server.

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

Table 1. Comparison of features

	<b>HX650 V3 Storage Integrated System HX650 V3 Storage Certified Node</b>	<b>HX650 V3 Integrated System HX650 V3 Certified Node</b>	<b>HX650 V3 IS for SAP HANA HX650 V3 CN for SAP HANA</b>
HX offering type	Integrated System Certified Node	Integrated System Certified Node	Integrated System Certified Node
Target workloads	Storage heavy	High performance/Mission Critical	SAP HANA
Base MTM	IS: 7D6NCTO2WW CN: 7D6NCTO4WW	IS: 7D6NCTO1WW CN: 7D6NCTO3WW	IS: 7D6NCTO5WW CN: 7D6NCTO6WW
Form Factor	2U	2U	2U
Base platform	SR650 V3	SR650 V3	SR650 V3
Supported Cluster Sizes	1 or 3+ Nodes	1 or 3+ Nodes	3+ Nodes
CPU	1x or 2x Intel Xeon SP Gen 5 (Emerald Rapids) or Gen 4 (Sapphire Rapids)	2x Intel Xeon SP Gen 5 (Emerald Rapids) or Gen 4 (Sapphire Rapids)	2x Intel Xeon SP Gen 5 (Emerald Rapids) or Gen 4 (Sapphire Rapids)
Memory	32x DDR5 5600 MHz (8TB maximum)	32x DDR5 5600 MHz (8TB maximum)	32x DDR5 5600 MHz (4TB maximum)
Drive Bays	Front: 12x 3.5" SAS/SATA Rear: 4x 2.5" SAS/SATA** (Optional)	Front: 16x 2.5" SAS/SATA or NVMe + optional 8x 2.5" AnyBay (supporting SAS, SATA or NVMe) Rear: None	Front: 16x 2.5" SAS/SATA or NVMe + optional 8x 2.5" AnyBay (supporting SAS, SATA or NVMe) Rear: None
Drive configurations	Hybrid	All Flash	All Flash
HBA	440-16i HBA	440-8i HBA 440-16i HBA	440-16i HBA
Boot drives	2x M.2	2x M.2	2x M.2
OCP networking	1x OCP 3.0 adapter 10Gb, 25Gb	1x OCP 3.0 adapter 10Gb, 25Gb	1x OCP 3.0 adapter 10Gb, 25Gb
PCIe networking	Up to 7x PCIe adapters 10Gb, 25Gb	Up to 7x PCIe adapters 10Gb, 25Gb, 100Gb	Up to 7x PCIe adapters 10Gb, 25Gb, 100Gb
GPUs	No GPU Support	3x Double Wide GPU 8x Single Wide GPU	No GPU Support
Hypervisor	Nutanix AHV, VMware ESXi	Nutanix AHV, VMware ESXi	Nutanix AHV, VMware ESXi

**\*\* Note:** Rear drive kit is for use only with 10 or more HDDs installed in the system

The following table lists the standard specifications.



Table 2. Standard specifications

Components	Specification
Machine types	7D6N - 2U Integrated Systems 7D6N - 2U Certified Node
Form factor	2U rack
Processor	Supports one or two 5th generation Intel Xeon Scalable processor (formerly codenamed "Emerald Rapids") or 4th-generation Intel Xeon Scalable processor (formerly codenamed "Sapphire Rapids"). Supports up to 64 cores per 5th generation processor and up to 60 cores per 4th generation processor, core speeds of up to 3.9 GHz, and TDP ratings of up to 350 W.
Chipset	Intel C741 "Emmitsburg" chipset, part of the platform codenamed "Eagle Stream"
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 5600 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.
Disk drive bays	<ul style="list-style-type: none"> <li>• HX650 V3 Storage Integrated System and Certified Node: <ul style="list-style-type: none"> <li>◦ Front drive bays: 12x 3.5-inch SAS/SATA</li> <li>◦ Rear drive bays: 4x 2.5-inch SAS/SATA**</li> </ul> </li> <li>• HX650 V3 Integrated System and Certified Node: <ul style="list-style-type: none"> <li>◦ Front drive bays (24 bays): 24x 2.5-inch NVMe</li> <li>◦ Front drive bays (16 bays max): 8x 2.5-inch SAS/SATA + 8x 2.5-inch AnyBay (supporting SAS, SATA or NVMe) or 16x 2.5-inch NVMe</li> <li>◦ Rear drive bays: None</li> </ul> </li> <li>• HX650 V3 Integrated System and Certified Node for SAP HANA: <ul style="list-style-type: none"> <li>◦ Front drive bays (24 bays): 16x 2.5-inch SAS/SATA or NVMe + 8x 2.5-inch AnyBay (supporting SAS, SATA or NVMe)</li> <li>◦ Front drive bays (16 bays max): 16x 2.5-inch SAS/SATA or NVMe</li> <li>◦ Rear drive bays: None</li> </ul> </li> <li>• Internal M.2 module supporting up to two M.2 drives, for OS boot support</li> <li>• <b>Note:</b> EDSFF drive bays are currently not supported.</li> </ul>
Storage controller	<ul style="list-style-type: none"> <li>• Onboard NVMe ports (RAID not supported)</li> <li>• 12 Gb SAS/SATA HBA (non-RAID) <ul style="list-style-type: none"> <li>◦ 8-port or 16-port</li> <li>◦ PCIe 5.0 or PCIe 4.0 host interface</li> </ul> </li> </ul>
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 10GbE and 25GbE network connectivity. 1Gbe port for XClarity Controller 2 (XCC2) management.

Components	Specification
PCIe slots	<p>Up to 8x PCIe 5.0 slots, all full height slots and with rear access, plus a slot dedicated to the OCP adapter. Slot availability is based on riser selection and rear drive bay selection. Slots 4, 5, and 6 (riser 2) require two processors.</p> <p>Slots are configured using three riser cards. Riser 1 (slots 1-3) and Riser 2 (slots 4-6) are installed in slots in the system board, Riser 3 (slots 7-8) is cabled to ports on the system board.</p> <p>A variety of riser cards are available. See the <a href="#">I/O expansion</a> for details.</p> <p>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.</p>
GPU support	Supports up to 8x single-wide GPUs or up to 3x double-wide GPUs
Ports	<p>Front: 1x USB 3 (5 Gb/s) port, 1x USB 2.0 port (also for XCC local management), External diagnostics port, optional VGA port.</p> <p>Rear: 3x USB 3 (5 Gb/s) ports, 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).</p> <p>Internal: 1x USB 3 G1 connector for operating system or license key purposes</p>
Cooling	6x (with two processors installed) or 5x (with one processor installed) dual-rotor hot swap 60 mm fans, configuration dependent. Fans are N+1 redundant, tolerating a single-rotor failure. One fan integrated in each power supply.
Power supply	Up to two hot-swap redundant AC power supplies, 80 PLUS Platinum or 80 PLUS Titanium certification. 750 W, 1100 W, 1800 W, 2400 W and 2600W 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 or 16x 2.5-inch front drive bays can optionally support an Integrated Diagnostics Panel. XClarity Controller 2 (XCC2) embedded management controller, XClarity Administrator centralized infrastructure delivery, XClarity Integrator plugins, and XClarity Energy Manager centralized server power management. Included upgrade to XClarity Controller Platinum to enable remote control and other functions.
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	<ul style="list-style-type: none"> <li>Integrated Systems: Nutanix 2.0 PnP: Starter, Pro, and Ultimate editions - Nutanix Cloud Platform, Nutanix Cloud Infrastructure, Nutanix Cloud Manager, NCI-Data</li> <li>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</li> </ul>
Hypervisors	Nutanix AHV or VMware ESXi.

Components	Specification
Hardware warranty	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>
Software maintenance	Three-, four-, 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: 38.8 kg (85.5 lb)

**\*\*Note:** Rear drive kit is for use only with 10 or more HDDs installed in the system

## 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/>

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

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

### Note:

- For all models listed in the GPU **Controlled models** column, one of the controlled GPUs *must* be selected in the DCSC configurator. DCSC will display an error if you configuration does not include one of the controlled GPUs.
- 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. CTO base models

Server model	Standard Open models	GPU Controlled models
	These CTO models are available in all markets. Configurations based on these MTMs cannot include controlled GPUs.	These CTO models are not available in affected markets. Configurations based on these MTMs must include controlled GPUs.
ThinkAgile HX650 V3 Integrated System	7D6NCTO1WW	7D6NCTOCWW
ThinkAgile HX650 V3 Storage Integrated System	7D6NCTO2WW	None
ThinkAgile HX650 V3 Certified Node	7D6NCTO3WW	7D6NCTODWW
ThinkAgile HX650 V3 Storage Certified Node	7D6NCTO4WW	None
ThinkAgile HX650 V3 Integrated System for SAP HANA	7D6NCTO5WW	None
ThinkAgile HX650 V3 Certified Node for SAP HANA	7D6NCTO6WW	None
ThinkAgile HX650 V3 LOD Integrated System - China Only	7D6NCTO7WW	None
ThinkAgile HX650 V3 Storage LOD Integrated System - China Only	7D6NCTO8WW	None
ThinkAgile HX650 V3 SAP HANA LOD Integrated System - China Only	7D6NCTO9WW	None

## Comparison with the ThinkSystem SR650 V3

The ThinkAgile HX650 V3 2U Integrated Systems & Certified Nodes are based on the ThinkSystem SR650 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
- No mid-chassis drive bay support
- Encryption not supported on SED drives
- Fibre Channel support for data migration only
- No InfiniBand support

For details about the ThinkSystem SR650 V3, see the SR650 V3 product guide:

<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server>

To verify what specific hardware components are supported with the HX650 V3, see the DCSC configurator:

<https://dcsc.lenovo.com>

## Processors

The HX650 V3 supports processors in either the 5th Gen Intel Xeon Scalable Processor\* family or the 4th Gen Intel Xeon Scalable Processor family.

Topics in this section:

- [5th Gen Intel Xeon Scalable processors\\*](#)
- [Lenovo Processor Neptune Core Module - Open-loop liquid cooling](#)

### 5th Gen Intel Xeon Scalable processors\*

The HX650 V3 support the following processors.

For details about these options, including configuration rules, see the SR650 V3 product guide:

<https://lenovopress.com/lp1601-thinksystem-sr650-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.

Configuration notes:

- HX650 V3 Integrated System and Certified Node supports 2 processors
- HX650 V3 Storage Integrated System and Certified Node support 1 or 2 processors
- HX650 V3 Integrated System and Certified Node for SAP HANA support will be coming in approximately 2Q calendar year
- The platform is available for early orderability only. Delivery and support for these systems will be available in 2H of calendar year 2024. For more details please reach out to your local Lenovo representative.

Table 4. Processor choices

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
None	BYW3	Intel Xeon Silver 4509Y 8C 125W 2.6GHz Processor	2	2	2	2	2	2
None	BYW4	Intel Xeon Silver 4510 12C 150W 2.4GHz Processor	2	2	2	2	2	2
None	BYVS	Intel Xeon Silver 4510T 12C 115W 2.0GHz Processor	2	2	2	2	2	2
None	BYVP	Intel Xeon Silver 4514Y 16C 150W 2.0GHz Processor	2	2	2	2	2	2
None	BYW6	Intel Xeon Silver 4516Y+ 24C 185W 2.2GHz Processor	2	2	2	2	2	2
None	BYVU	Intel Xeon Gold 5512U 28C 185W 2.1GHz Processor	No	1	No	1	No	No
None	BYVW	Intel Xeon Gold 5515+ 8C 165W 3.2GHz Processor	2	2	2	2	2	2
None	BYW7	Intel Xeon Gold 5520+ 28C 205W 2.2GHz Processor	2	2	2	2	2	2
None	BYVX	Intel Xeon Gold 6526Y 16C 195W 2.8GHz Processor	2	2	2	2	2	2
None	BYWK	Intel Xeon Gold 6530 32C 270W 2.1GHz Processor	2	2	2	2	2	2
None	BYW0	Intel Xeon Gold 6534 8C 195W 3.9GHz Processor	2	2	2	2	2	2



Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
None	BYVQ	Intel Xeon Gold 6538N 32C 205W 2.1GHz Processor	2	2	2	2	2	2
None	BYW8	Intel Xeon Gold 6538Y+ 32C 225W 2.2GHz Processor	2	2	2	2	2	2
None	BYVY	Intel Xeon Gold 6542Y 24C 250W 2.9GHz Processor	2	2	2	2	2	2
None	BYW1	Intel Xeon Gold 6544Y 16C 270W 3.6GHz Processor	2	2	2	2	2	2
None	BYVR	Intel Xeon Gold 6548N 32C 250W 2.8GHz Processor	2	2	2	2	2	2
None	BYVZ	Intel Xeon Gold 6548Y+ 32C 250W 2.5GHz Processor	2	2	2	2	2	2
None	BYW9	Intel Xeon Gold 6554S 36C 270W 2.2GHz Processor	2	2	2	2	2	2
None	BYW5	Intel Xeon Platinum 8558 48C 330W 2.1GHz Processor	2	2	2	2	2	2
None	BYWA	Intel Xeon Platinum 8558P 48C 350W 2.7GHz Processor	2	2	2	2	2	2
None	BYWE	Intel Xeon Platinum 8558U 48C 300W 2.0GHz Processor	No	1	No	1	No	No
None	BYW2	Intel Xeon Platinum 8562Y+ 32C 300W 2.8GHz Processor	2	2	2	2	2	2
None	BYWF	Intel Xeon Platinum 8568Y+ 48C 350W 2.3GHz Processor	2	2	2	2	2	2
None	BYWG	Intel Xeon Platinum 8570 56C 350W 2.1GHz Processor	2	2	2	2	2	2
None	BYWD	Intel Xeon Platinum 8571N 52C 300W 2.4GHz Processor	No	1	No	1	No	No
None	BYWH	Intel Xeon Platinum 8580 60C 350W 2.0GHz Processor	2	2	2	2	2	2
None	BYWC	Intel Xeon Platinum 8581V 60C 270W 2.0GHz Processor	No	1	No	1	No	No
None	BYWJ	Intel Xeon Platinum 8592+ 64C 350W 1.9GHz Processor	2	2	2	2	2	2
None	BYWB	Intel Xeon Platinum 8592V 64C 330W 2.0GHz Processor	No	1	No	1	No	No

### Lenovo Processor Neptune Core Module - Open-loop liquid cooling

The HX650 V3 also supports advanced direct-water cooling (DWC) capability with the Lenovo Processor Neptune Core Module. This module implements a liquid cooling solution where heat from the processors is removed from the rack and the data center using an open loop and coolant distribution units.

With the Processor Neptune Core Module, all heat generated by the processors is removed from the server using water. This means that the server fans and data center air conditioning units only need to remove the heat generated by the other components. This results in lower air conditioning costs and it enables the use of slower fans which results in lower overall power consumption.

Typical power saving of 23% (up to 9.9KW per rack) are possible, based on 18x HX650 V3 servers in a rack (DC level PUE weighted) at 30°C ambient temperature. Power savings are configuration dependent.

The following figure shows the Lenovo Processor Neptune Core Module.

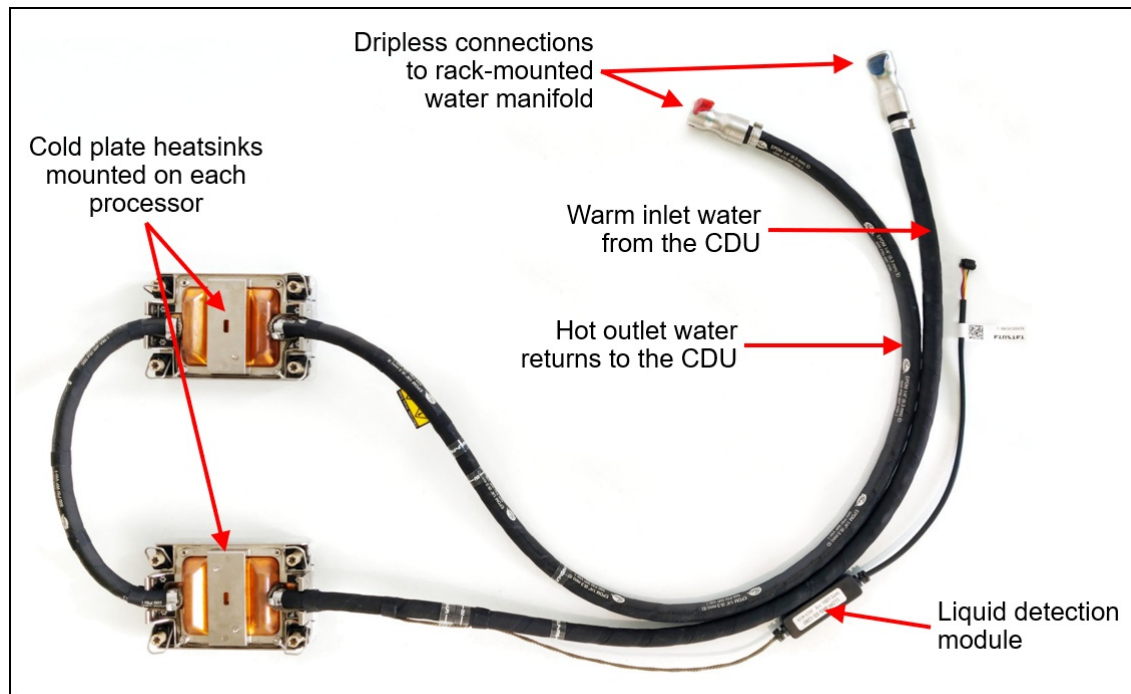


Figure 6. Lenovo Processor Neptune Core Module

The Processor Neptune Core Module also includes a leak detection module which can detect a leakage of more than 0.5ml (about 10 drops) along the length of the tube and then issue an event to the XClarity Controller. XCC will then post an error to the System Event Log and enable further actions. Once the liquid evaporates, a further event is issue to XCC.

The Processor Neptune Core Module is only available in CTO orders, not as a field upgrade. Ordering information is listed in the following table.

Table 5. Lenovo Processor Neptune Core Module

Part number	Feature code	Description
CTO only	BXBC*	ThinkSystem V3 1U/2U Neptune Processor Direct Water Cooling Solution

\* In DCSC, this feature code is listed in the Processor tab

Configuration notes:

- The Processor Neptune Core Module requires water infrastructure be available in the rack cabinet and data center, as described in the [Water infrastructure](#) section.
- All processor SKUs are supported
- Either one or two CPUs are supported
- All front drive bay configurations are supported
- Slot 6 is not available for adapters - the water loop is routed through the space otherwise occupied by slot 6
- Rear drive bays are supported
- 7mm drive bays are supported only in slot 3
- M.2 adapters are supported based on the configurations in the [Storage configurations](#) section
- Standard fans can be configured in most configurations
- The use of a cable management arm (CMA) is not supported

For more information, see the Thermal Rules page:  
[https://pubs.lenovo.com/sr650-v3/thermal\\_rules](https://pubs.lenovo.com/sr650-v3/thermal_rules)

## Memory

### 5th Generation Memory options

The HX650 V3 support the following memory options.

For details about these options, including configuration rules, see the SR650 V3 product guide:  
<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#memory-options>

Table 6. Memory options

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
RDIMMs - 5600 MHz								
4X77A88087	BWJE	ThinkSystem 16GB TruDDR5 5600MHz (1Rx8) RDIMM	32	32	32	32	32	32
4X77A88056	BWSL	ThinkSystem 24GB TruDDR5 5600MHz (1Rx8) RDIMM	32	32	32	32	32	32
4X77A88049	BWHW	ThinkSystem 32GB TruDDR5 5600MHz (1Rx4) RDIMM	32	32	32	32	32	32
4X77A88051	BWJC	ThinkSystem 32GB TruDDR5 5600MHz (2Rx8) RDIMM	32	32	32	32	32	32
4X77A88639	BX8Y	ThinkSystem 48GB TruDDR5 5600MHz (1Rx4) RDIMM	32	32	32	32	32	32
4X77A88057	BWJD	ThinkSystem 48GB TruDDR5 5600MHz (2Rx8) RDIMM	32	32	32	32	32	32
4X77A88052	BWHS	ThinkSystem 64GB TruDDR5 5600MHz (2Rx4) RDIMM	32	32	32	32	32	32
4X77A88058	BWHV	ThinkSystem 96GB TruDDR5 5600MHz (2Rx4) RDIMM	32	32	32	32	32	32
4X77A93887	C4EA	ThinkSystem 128GB TruDDR5 5600MHz (2Rx4) RDIMM	32	32	32	32	32	32
3DS RDIMMs - 5600 MHz								
4X77A88054	BWHU	ThinkSystem 128GB TruDDR5 5600MHz (4Rx4) 3DS RDIMM	32	32	32	32	32	32

### 4th Generation Memory options

The HX650 V3 support the following memory options.

For details about these options, including configuration rules, see the SR650 V3 product guide:  
<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#memory-options>

Table 7. Memory options

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
RDIMMs - 4800 MHz								
4X77A77029	BKTL	ThinkSystem 16GB TruDDR5 4800MHz (1Rx8) RDIMM	32	32	32	32	32	32
4X77A77031	BKTM	ThinkSystem 32GB TruDDR5 4800MHz (2Rx8) RDIMM	32	32	32	32	32	32
4X77A77030	BNF6	ThinkSystem 32GB TruDDR5 4800MHz (1Rx4) 10x4 RDIMM	32	32	32	32	32	32
4X77A87033	C1HB	ThinkSystem 48GB TruDDR5 4800MHz (2Rx8) RDIMM	32	32	32	32	32	32
4X77A77032	BNF9	ThinkSystem 64GB TruDDR5 4800MHz (2Rx4) 10x4 RDIMM	32	32	32	32	32	32
4X77A87034	BZC2	ThinkSystem 96GB TruDDR5 4800MHz (2Rx4) RDIMM	32	32	32	32	32	32
3DS RDIMMs - 4800 MHz								
4X77A77034	BNFC	ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM v2	32	32	32	32	32	32
4X77A77035	BNF8	ThinkSystem 256GB TruDDR5 4800MHz (8Rx4) 3DS RDIMM v2	32	32	32	32	16	16

## Internal storage

Internal storage configurations of the HX650 V3 are as follows. All drives are hot-swap and are accessible from the front or rear of the system:

- HX650 V3 Integrated System and Certified Node:
  - Front: 16x 2.5" SAS/SATA + optional 8x 2.5" AnyBay
  - Rear: None
- HX650 V3 Storage Integrated System and Certified Node:
  - Front: 12x 3.5" SAS/SATA
  - Rear: 4x 2.5" SAS/SATA (Optional)\*\*
- HX650 V3 Integrated System and Certified Node for SAP HANA:
  - Front: 16x 2.5" SAS/SATA + optional 8x 2.5" AnyBay
  - Rear: None

The systems also support the following boot drive alternatives:

- M.2 drives in an M.2 adapter that is internal to the server

**Note:** Mid-chassis drives are not supported in HX650 V3.

## Configuration rules

Configuration rules are as follows:

- Nutanix does not use the concept of "cache" drives but rather uses tiers. There are three tiers currently supported
  - NVMe

- SAS/SATA SSD
- HDD tier - requires the SAS/SATA SSD
- Currently, HX doesn't support mixed NVMe+HDD.
- HX Systems can be configured as:
  - NVMe only
  - NVMe+SAS/SATA SSD
  - SAS/SATA SSD only
  - SAS/SATA SSD+HDD
- All drives in a tier must be of the same capacity.
- For All Flash configurations, the system supports from 4 to 14 SSDs
- 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
- If using NVMe for boot, 2 drives are required and are used in RAID 1. When using SATA for boot only a single drive is required.
- Currently the max number of 2.5-inch drive slots is 16 when configuring a solution and will increase to 24 in the 4th quarter of this calendar year.

\*\* Note: Rear drive kit is for use only with 10 or more HDDs installed in the system

## 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 SR650 V3 product guide:

<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#internal-storage>

Table 8. Drive backplanes

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
Front 3.5-inch drive backplanes								
None	B8LT	ThinkSystem 2U 12x3.5" SAS/SATA Backplane	No	1	No	1	No	No
Front 2.5-inch drive backplanes								
None	B8LU	ThinkSystem 2U 8x2.5" SAS/SATA Backplane	3	No	3	No	3	3
None	BH8B	ThinkSystem 2U/4U 8x2.5" AnyBay Backplane	1	No	1	No	1	1
None	BH8D	ThinkSystem 2U/4U 8x2.5" NVMe Backplane*	3	No	3	No	3	3
Rear 2.5-inch drive backplanes								
None	B8LV	ThinkSystem 2U 4x2.5" SAS/SATA Backplane**	No	1	No	1	No	No
7mm Drive Kit								
None	B8P3	ThinkSystem 2U 7mm Drive Kit w/ NVMe RAID	1	1	1	1	1	1

\*Note: 1 NVMe backplane is valid for use with 2 or more GPUs installed in the system

\*\*Note: Rear drive kit is for use only with 10 or more HDDs installed in the system

## Boot drive enablement

For OS boot functions, the systems also supports two M.2 drives installed on an adapter internal to the server. The following table lists the supported controllers/enablement kits for M.2 boot drives.

For details about these options, including configuration rules, see the SR650 V3 product guide:

<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#internal-storage>

Table 9. Boot drive enablement

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
4Y37A79663	BM8X	ThinkSystem M.2 SATA/x4 NVMe 2-Bay Adapter	1	1	1	1	1	1
4Y37A09750	B8P9	ThinkSystem M.2 NVMe 2-Bay RAID Adapter	1	1	1	1	1	1

## Controllers for internal storage

The HX650 V3 support the following internal storage controllers.

For details about these options, see the SR650 V3 product guide:

<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#controllers-for-internal-storage>

Table 10. Controllers for internal storage

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
SAS/SATA HBA - PCIe 4.0								
4Y37A78602	BM50	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA	No	1	No	1	No	No
4Y37A09725	B8P1	ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb Internal HBA	1	No	1	No	1	1
NVMe adapters								
4C57A65446	B98C	ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter	1	No	1	No	1	1

## Internal drive options



The following table lists the supported drive options for the HX650 V3.

Configuration Note:

- Currently the max number of 2.5-inch drive slots is 16 when configuring a solution and will increase to 24 in the 4th quarter of this calendar year.
- HDDs over 20TB are only for use with Nutanix Unified Storage (NUS)

Table 11. Internal drive options

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
2.5-inch hot-swap 24Gb SAS SSDs								
4XB7A80340	BNW8	ThinkSystem 2.5" PM1655 800GB Mixed Use SAS 24Gb HS SSD	24	4	24	4	24	24
4XB7A80341	BNW9	ThinkSystem 2.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	24	4	24	4	24	24
4XB7A80320	BNWF	ThinkSystem 2.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	24	4	24	4	24	24
4XB7A80321	BP3E	ThinkSystem 2.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	24	4	24	4	24	24
2.5-inch hot-swap 6 Gb SATA SSDs								
4XB7A87526	BWKL	ThinkSystem 2.5" PM893a 1.92TB Read Intensive SATA 6Gb HS SSD	24	4	24	4	24	24
4XB7A87527	BWKK	ThinkSystem 2.5" PM893a 3.84TB Read Intensive SATA 6Gb HS SSD	24	4	24	4	24	24
4XB7A17103	BA7J	ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	24	4	24	4	24	24
4XB7A17104	BK77	ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	24	4	24	4	24	24
4XB7A17126	BA4T	ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	24	4	24	4	24	24
4XB7A17127	BA4U	ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	24	4	24	4	24	24
4XB7A17128	BK7L	ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	24	4	24	4	24	24
2.5-inch hot-swap PCIe 4.0 NVMe SSDs								
4XB7A13941	BMGD	ThinkSystem 2.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A13631	BNEQ	ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7B01867	C6MA	ThinkSystem 2.5" U.2 Solidigm P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
4XB7B01868	C6MB	ThinkSystem 2.5" U.2 Solidigm P5520 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7B01869	C6MC	ThinkSystem 2.5" U.2 Solidigm P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7B01870	C7NZ	ThinkSystem 2.5" U.2 Solidigm P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7B01879	C6M2	ThinkSystem 2.5" U.2 Solidigm P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7B01880	C6M3	ThinkSystem 2.5" U.2 Solidigm P5620 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7B01881	C6M4	ThinkSystem 2.5" U.2 Solidigm P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A17129	BNEG	ThinkSystem 2.5" U.2 P5620 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A95055	C2BV	ThinkSystem 2.5" U.3 7500 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A95056	C2BW	ThinkSystem 2.5" U.3 7500 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A95057	C2BF	ThinkSystem 2.5" U.3 7500 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A95050	C2BR	ThinkSystem 2.5" U.3 7500 PRO 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A95051	C2BS	ThinkSystem 2.5" U.3 7500 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A95052	C2BT	ThinkSystem 2.5" U.3 7500 PRO 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
4XB7A95053	C2BU	ThinkSystem 2.5" U.3 7500 PRO 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD	24	No	24	No	24	24
<b>3.5-inch hot-swap 12 Gb SAS HDDs</b>								
7XB7A00046	AUUG	ThinkSystem 3.5" 10TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	12	No	12	No	No
7XB7A00067	B117	ThinkSystem 3.5" 12TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	12	No	12	No	No
4XB7A80353	BPKU	ThinkSystem 3.5" 20TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	12	No	12	No	No
4XB7A93007	C2BH	ThinkSystem 3.5" 24TB 7.2K SAS 12Gb Hot Swap 512e HDD	No	12	No	12	No	No
<b>3.5-inch hot-swap 6 Gb SAS HDDs</b>								
7XB7A00051	AUU8	ThinkSystem 3.5" 4TB 7.2K SATA 6Gb Hot Swap 512n HDD	No	12	No	12	No	No
7XB7A00052	AUUA	ThinkSystem 3.5" 6TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	12	No	12	No	No
7XB7A00053	AUU9	ThinkSystem 3.5" 8TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	12	No	12	No	No
7XB7A00054	AUUB	ThinkSystem 3.5" 10TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	12	No	12	No	No

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
7XB7A00068	B118	ThinkSystem 3.5" 12TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	12	No	12	No	No
4XB7A13914	B7F0	ThinkSystem 3.5" 16TB 7.2K SATA 6Gb Hot Swap 512e HDD	No	12	No	12	No	No
<b>3.5-inch hot-swap 24 Gb SAS SSDs</b>								
4XB7A80345	BNWA	ThinkSystem 3.5" PM1655 1.6TB Mixed Use SAS 24Gb HS SSD	No	12	No	12	No	No
4XB7A80326	BNWH	ThinkSystem 3.5" PM1653 3.84TB Read Intensive SAS 24Gb HS SSD	No	12	No	12	No	No
4XB7A80327	BP3F	ThinkSystem 3.5" PM1653 7.68TB Read Intensive SAS 24Gb HS SSD	No	12	No	12	No	No
<b>3.5-inch hot-swap 6 Gb SATA SSDs</b>								
4XB7A17121	BA7N	ThinkSystem 3.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD	No	12	No	12	No	No
4XB7A17122	BK7F	ThinkSystem 3.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD	No	12	No	12	No	No
4XB7A17138	BA4X	ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb HS SSD	No	12	No	12	No	No
4XB7A17139	BA4Y	ThinkSystem 3.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD	No	12	No	12	No	No
4XB7A17140	BK7P	ThinkSystem 3.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD	No	12	No	12	No	No
<b>7mm- NVMe PCIe 4.0 x4 NHS SSD</b>								
4XB7A90096	BXMN	ThinkSystem 7mm U.2 PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	2	2	2	2	2	2
4XB7A82853	BPZ4	ThinkSystem 7mm U.3 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 HS SSD	2	2	2	2	2	2
<b>M.2- 6 Gb SATA SSDs</b>								
4XB7A82286	BQ1Z	ThinkSystem M.2 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD	2	2	2	2	2	2
4XB7A82287	BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	2	2	2	2	2	2
<b>M.2- NVMe PCIe 4.0 x4 NHS SSD</b>								
4XB7A13999	BKSR	ThinkSystem M.2 7450 PRO 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2	2	2	2	2	2
4XB7A90102	BXMH	ThinkSystem M.2 PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD	2	2	2	2	2	2

## Network adapters

The HX650 V3 support the following networking options.

For details about these options, including configuration rules, see the SR650 V3 product guide:

<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#i-o-expansion>

<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#network-adapters>

**Note:** When using different vendor NICs, failover is not supported between these NICs. When possible, select only one vendor for network adapters. When multiple vendors must be used, ensure that redundant links are on NICs from the same vendor to avoid issues.

Table 12. OCP network adapters

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
10GBASE-T Ethernet								
4XC7A80268	BPPY	ThinkSystem Intel X710-T4L 10GBase-T 4-Port OCP Ethernet Adapter	1	1	1	1	1	1
4XC7A08240	B5T4	ThinkSystem Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter	1	1	1	1	1	1
4XC7A08236	B5ST	ThinkSystem Broadcom 57416 10GBASE-T 2-port OCP Ethernet Adapter	1	1	1	1	1	1
25 Gb Ethernet								
4XC7A08237	BN2T	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-Port OCP Ethernet Adapter	1	1	1	1	1	1
4XC7A62582	BE4T	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-port OCP Ethernet Adapter	1	1	1	1	1	1

Table 13. PCIe network adapters

Part number	Feature	Description	Maximum supported					
			HX650 V3 IS	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
10GBASE-T Ethernet								
7ZT7A00496	AUKP	ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	7	7	7	7	7	7
4XC7A79699	BMXB	ThinkSystem Intel X710-T4L 10GBase-T 4-Port PCIe Ethernet Adapter	5	5	5	5	5	5
25 Gb Ethernet								
4XC7A08238	BK1H	ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter V2	7	7	7	7	7	7
4XC7A62580	BE4U	ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-port PCIe Ethernet Adapter	7	7	7	7	7	7
100 Gb Ethernet								
4XC7A08248	B8PP	ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter	5	5	5	5	5	5

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

## GPU adapters

The HX650 V3 systems support the following GPU options.

For details about these options, including configuration rules, see the SR650 V3 product guide:

<https://lenovopress.com/lp1601-thinksystem-sr650-v3-server#gpu-adapters>

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

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

**Note:**

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

**Configuration Note:**

- Some GPUs are only available with VMware ESXi selected as the hypervisor
- Some GPUs are unavailable because of government restriction in certain markets.
- A2 support in AHV is planned for AOS 6.9
- The HX650 V3 Storage Integrated System and Certified Node do not support GPUs.
- 1 NVMe backplane is valid for use with 2 or more GPUs installed in the system

Table 14. GPU adapters

Part number	Feature	Description	Maximum supported							
			HX650 V3 IS	HX650 V3 IS w/Cntrl GPU	HX650 V3 Storage IS	HX650 V3 CN	HX650 V3 CN w/Cntrl GPU	HX650 V3 Storage CN	HX650 V3 SAP HANA IS	HX650 V3 SAP HANA CN
Double-wide GPUs										
4X67A76581	BQZR	ThinkSystem NVIDIA A30 24GB PCIe Gen4 Passive GPU w/o CEC	No	3	No	No	3	No	No	No
4X67A84823	BT87	ThinkSystem NVIDIA L40 48GB PCIe Gen4 Passive GPU	No	3	No	No	3	No	No	No
4X67A90669	BYFH	ThinkSystem NVIDIA L40S 48GB PCIe Gen4 Passive GPU	No	3	No	No	3	No	No	No
4X67A76727	BQZU	ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU w/o CEC	3	No	No	3	No	No	No	No
4X67A89325	BXAK	ThinkSystem NVIDIA H100 NVL 94GB PCIe Gen5 Passive GPU	No	3	No	No	3	No	No	No
Single-wide GPUs										
4X67A81547	BQZT	ThinkSystem NVIDIA A2 16GB PCIe Gen4 Passive GPU w/o CEC	8	No	No	8	No	No	No	No
4X67A84824	BS2C	ThinkSystem NVIDIA L4 24GB PCIe Gen4 Passive GPU	No	8	No	No	8	No	No	No

**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 15. 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 Integrated Systems require VMware vCenter Server.
- The HX Certified Nodes 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 16. Software Editions

License Tier	Nutanix Cloud Platform (NCP)	Nutanix Cloud Infrastructure (NCI)	Nutanix Cloud Manager (NCM)	NCI-Data
Ultimate	<ul style="list-style-type: none"> <li>• NCI Ultimate</li> <li>• NCM Ultimate</li> </ul>	<ul style="list-style-type: none"> <li>• Advanced DR: Sync, Near-Sync,</li> <li>• Runbook Security: Micro-segmentation, Encryption</li> <li>• Cloud Native: Kubernetes Services</li> </ul>	<ul style="list-style-type: none"> <li>• Application Automation</li> <li>• Security General</li> </ul>	<ul style="list-style-type: none"> <li>• No Mseg</li> <li>• No Karbon</li> </ul>
Pro	<ul style="list-style-type: none"> <li>• NCI Ultimate</li> <li>• NCM Pro</li> </ul>	<ul style="list-style-type: none"> <li>• Multisite Async DR</li> <li>• Overlay Networking</li> </ul>	<ul style="list-style-type: none"> <li>• Self Service Cost Governance</li> </ul>	<ul style="list-style-type: none"> <li>• No Flow Networking</li> </ul>
Starter	<ul style="list-style-type: none"> <li>• NCI Pro</li> <li>• NCM Pro</li> </ul>	<ul style="list-style-type: none"> <li>• AOS Storage + Compression + Dedup</li> </ul>	<ul style="list-style-type: none"> <li>• AI Operations</li> </ul>	<ul style="list-style-type: none"> <li>• No AHV Support</li> </ul>

**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 17. Nutanix license options

Feature code	Description	Quantity Required
BVKU	Nutanix Cloud Platform Starter Edition	1 per node
BVKW	Nutanix Cloud Platform Pro Edition	1 per node
BVKY	Nutanix Cloud Platform Ultimate Edition	1 per node
BSPJ	Nutanix Cloud Infrastructure Starter Edition	1 per node
BSPG	Nutanix Cloud Infrastructure Pro Edition	1 per node
BSPL	Nutanix Cloud Infrastructure Ultimate Edition	1 per node
BSQ0	Nutanix Cloud Manager Starter Edition	1 per node
BSPY	Nutanix Cloud Manager Pro Edition	1 per node
BSQ2	Nutanix Cloud Manager Ultimate Edition	1 per node
BSPQ	NCI-Data Starter Edition	1 per node
BSPN	NCI-Data Pro Edition	1 per node
BSPS	NCI-Data Ultimate Edition	1 per node
BSQH	Nutanix Database Service (NDB) Platform	1 per node
BSQ7	End User Computing (EUC) Starter	1 for every 200 concurrent users
BSQ5	End User Computing (EUC) Pro	1 for every 200 concurrent users
BSQ9	End User Computing (EUC) Ultimate	1 for every 200 concurrent users
BSQD	Nutanix Unified Storage (NUS) Starter	1 per Tib
BSQB	Nutanix Unified Storage (NUS) Pro	1 per Tib

## Warranty and Support

The ThinkAgile HX Series Integrated Systems can be configured with a three-, four, or five-year hardware warranty with 24x7 ThinkAgile Premier 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 HX650 V3 2U Integrated Systems & Certified Nodes have a 3-year warranty:

- 7D6N - 2U Integrated System - 3 year warranty
- 7D6N - 2U Certified Node - 3 year warranty

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

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

For more information, consult the brochure [Lenovo Operational Support Services for Data Centers Services](#).

### 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 18. Deployment offerings

Part number	Description
<b>Onsite deployment services</b>	
5MS7B00043	ThinkAgile HX Onsite Deployment (up to 3 nodes)
5MS7B00044	ThinkAgile HX Onsite Deployment (additional node)
<b>Remote deployment services</b>	
5MS7B00045	ThinkAgile HX Remote Deployment (up to 3 nodes)
5MS7B00046	ThinkAgile HX Remote Deployment (additional node)
5MS7A27430	ThinkAgile HX SAP HANA Deployment - Custom
<b>Remote Health Check</b>	
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 TruScale

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

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

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

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

## Lenovo Financial Services

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

- **Flexible**

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

- **100% Solution Financing**

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

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

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

- **24/7 Asset management**

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

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

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

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

## Seller training courses

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



## 1. **Lenovo Data Center Product Portfolio**

2025-06-11 | 20 minutes | Employees and Partners

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

Course objectives:

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

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

Published: 2025-06-11

Length: 20 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: SXXW1110r8

## 2. **VTT: Nutanix Integration in XClarity One - SAM - May 2025**

2025-06-10 | 56 minutes | Employees Only

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

Tags: Nutanix, XClarity

Published: 2025-06-10

Length: 56 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Course code: DVSYS217

### 3. **Partner Technical Webinar - ThinkAgile V4**

2025-06-09 | 60 minutes | Employees and Partners

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

Tags: Microsoft, Nutanix, VMware

Published: 2025-06-09

Length: 60 minutes

#### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: JUN0625

### 4. **Family Portfolio: ThinkAgile Systems**

2025-04-30 | 45 minutes | Employees and Partners

This course covers the foundational components of the ThinkAgile family, including server configurations, key system differences, and the unique features of the HX, MX, and VX product families.

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

- List the ThinkSystem and ThinkEdge servers that the ThinkAgile family is based on
- Explain the difference between Certified Nodes and Integrated Systems
- List two features each of the HX, MX, and VX families

Tags: ThinkAgile, ThinkSystem

Published: 2025-04-30

Length: 45 minutes

#### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: SXSW2150r2

### 5. **Partner Technical Webinar - Storage Announcements**

2025-04-29 | 60 minutes | Employees and Partners

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

Tags: Data Management, ThinkAgile

Published: 2025-04-29

Length: 60 minutes

#### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: 042525

## 6. **Think AI Weekly: Simplifying AI Deployments with ThinkAgile**

2025-04-11 | 54 minutes | Employees Only

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

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

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2025-04-11

Length: 54 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](#)

Course code: DTAIW137

## 7. **Lenovo TruScale for Hosted Desktops with Nutanix**

2025-02-04 | 15 minutes | Employees and Partners

By exemplifying the case of a customer who wants to move to a remote desktop public cloud solution, this 15-minute course offers an overview of the Lenovo TruScale for Hosted Desktops with Nutanix solution, including benefits, architecture, and value proposition.

After completing this course, you will be able to describe the Lenovo TruScale for Hosted Desktops with Nutanix solution, articulate the value proposition of this Hosted Desktops solution, and identify opportunities for this Lenovo-Nutanix solution.

Tags: ThinkAgile, TruScale

Published: 2025-02-04

Length: 15 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DSOLO109

## 8. **Selling On Prem Value - Private Cloud and Private AI**

2024-12-13 | 40 minutes | Employees Only

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

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

Published: 2024-12-13

Length: 40 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](#)

Course code: DVMB101

9. **Partner Technical Webinar - Data Center 101 - Why HCI? Why 3-tier?**

2024-11-14 | 60 minutes | Employees and Partners

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

Tags: ThinkAgile, ThinkSystem

Published: 2024-11-14

Length: 60 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: 101124

10. **ThinkAgile Solutions for AI - Security and Compliance Considerations**

2024-10-01 | 15 minutes | Employees and Partners

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

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

- Describe security features of ThinkAgile for AI data protection.
- Explain how to mitigate risk and address compliance considerations in AI deployments.

Last Updated: September 2024

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

Published: 2024-10-01

Length: 15 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDAI203

## 11. Integration of ThinkAgile and AI

2024-09-11 | 25 minutes | Employees and Partners

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

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

- Highlight the advantages of using ThinkAgile for AI workloads
- Explore how ThinkAgile platforms are specifically optimized for AI

Last Updated: September 2024

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2024-09-11

Length: 25 minutes

### Start the training:

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDAI204

## 12. Key Features of Lenovo ThinkAgile Solutions for AI

2024-09-10 | 15 minutes | Employees and Partners

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

In this course, you will learn how to:

- Present compute capabilities for AI processing
- Articulate optimized storage solutions with ThinkAgile for high-speed AI performance
- Identify essential networking considerations for ThinkAgile AI workloads
- Present ThinkAgile AI Ready solutions

Last Updated: September 2024

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2024-09-10

Length: 15 minutes

### Start the training:

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDAI201

### 13. **ThinkAgile Solutions for AI - Sales Strategies and Messaging**

2024-09-06 | 15 minutes | Employees and Partners

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

In this course, you'll learn how to:

- Identify customer pain points.
- Recommend ThinkAgile Solutions for AI tailored to those needs. And lastly,
- Communicate the benefits of ThinkAgile for AI to key stakeholders.

Last Updated: September 2024

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2024-09-06

Length: 15 minutes

#### **Start the training:**

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDAI202

### 14. **Position Lenovo ThinkAgile Solutions for AI**

2024-08-19 | 10 minutes | Employees and Partners

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

In this course, you will learn how to position ThinkAgile Solutions for AI to your customers by:

- Evaluating the key challenges in the enterprise landscape
- Advocating the value proposition of ThinkAgile Hyper-Converged Infrastructure
- Exploring use cases of ThinkAgile in AI environments
- Implementing ThinkAgile-based AI deployments

Tags: Artificial Intelligence (AI), ThinkAgile

Published: 2024-08-19

Length: 10 minutes

#### **Start the training:**

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDAI200

15. **ThinkAgile Roadshow for Account Managers**

2024-06-21 | 60 minutes | Employees Only

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

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

Published: 2024-06-21

Length: 60 minutes

**Start the training:**

Employee link: [Grow@Lenovo](#)

Course code: DTAO101

16. **SAP Webinar for Lenovo Sellers: Lenovo Portfolio Update for SAP Landscapes**

2024-06-04 | 60 minutes | Employees Only

Join Mark Kelly, Advisory IT Architect with the Lenovo Global SAP Center of Competence as he discusses:

- Challenges in the SAP environment
- Lenovo On-premise Solutions for SAP
- Lenovo support resources for SAP solutions

Tags: SAP, ThinkAgile, ThinkEdge, ThinkSystem

Published: 2024-06-04

Length: 60 minutes

**Start the training:**

Employee link: [Grow@Lenovo](#)

Course code: DSAPF101

17. **VTT Cloud Architecture: NVIDIA Using Cloud for GPUs and AI**

2024-05-22 | 60 minutes | Employees Only

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

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

Published: 2024-05-22

Length: 60 minutes

**Start the training:**

Employee link: [Grow@Lenovo](#)

Course code: DVCLD212

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

2024-05-20 | 25 minutes | Employees and Partners

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

Course Objectives:

- Understand why customers choose the cloud
- Describe the Lenovo Cloud Strategy
- Be able to start the customer cloud conversation

Tags: Cloud, Technology solutions

Published: 2024-05-20

Length: 25 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDS103r3

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

2024-04-10 | 50 minutes | Employees Only

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

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

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

Published: 2024-04-10

Length: 50 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Course code: DVCLD211



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

2024-04-10 | 60 minutes | Employees and Partners

In this course, you will know:

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

Tags: Data Management, Storage

Published: 2024-04-10

Length: 60 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DVDAT209

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

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

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

Learning Objectives:

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

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

Published: 2024-03-07

Length: 35 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDT2001r3

## 22. **Lenovo HX Business Conversations**

2024-03-06 | 20 minutes | Employees and Partners

This course covers business conversations for Lenovo HX Hyperconverged solutions.

Course objectives:

- Identify a potential Lenovo HX opportunity
- Conduct effective discovery to reveal the customer's data center needs
- Probe the customer
- Ensure the customer knows you understand their issue(s)

Tags: DataCenter Products, Nutanix, Storage

Published: 2024-03-06

Length: 20 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCGHXB001

## 23. **Family Introduction: Converged and Hyperconverged**

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

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

Objectives:

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

Tags: Sales, Storage

Published: 2024-01-25

Length: 15 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: SXSW1101r2

#### 24. **The 10-minute Edge conversation for Lenovo Sellers**

2023-12-14 | 20 minutes | Employees and Partners

The purpose of this course is to enable sellers to have a 10 to 15-minute customer conversation addressing the relevancy of Edge solutions to the customer business.

Learning Objectives:

- Prepare for the initial customer conversation
- Hold a 10-minute Edge Operational Technology (OT) conversation
- Take the appropriate steps to progress the sale

Tags: ThinkEdge

Published: 2023-12-14

Length: 20 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DTEF103

#### 25. **VEEAM Solutions Sales Training**

2023-09-27 | 20 minutes | Employees and Partners

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

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

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

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

Tags: Sales

Published: 2023-09-27

Length: 20 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DSTOO100

26. **A Seller's Guide to Nutanix OEM 2.0**

2023-08-24 | 90 minutes | Employees Only

In this Sales Team webinar, Mike Tilt, Ritu Jain and Brandon Saxton will cover the new Nutanix 2.0 pricing and packaging options to guide sellers on what the different types of offers, sales process and how to sell Nutanix 2.0. You will get an overview of OEM 2.0, Sales Process, PNP Pricing and Zone Information, and additional resources on Upgrade & Renewal SKUs and process.

Course Objectives

- Defining Nutanix 2.0 Pricing and Packaging
- Describing OEM 2.0 Sales Process
- Identifying resources and support

Tags: Nutanix, OEM, Sales

Published: 2023-08-24

Length: 90 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Course code: DSXNS101

27. **Empowering Technical Sellers: Excelling In Transactional Workloads**

2023-08-18 | 60 minutes | Employees and Partners

This training abstract outlines a comprehensive program designed to equip technical sellers with the knowledge and expertise required to effectively promote and sell Lenovo and Nutanix solutions for transactional workloads. By focusing on the unique capabilities and advantages of Lenovo and Nutanix infrastructure in handling high-performance transactional applications, this training program empowers technical sellers to engage with customers, understand their specific workload requirements, and articulate the value proposition of Lenovo and Nutanix offerings in this domain.

The training program encompasses the following key areas:

1. Transactional Workloads Overview:
2. Lenovo and Nutanix Solutions for Transactional Workloads:
3. Product Portfolio Deep Dive:
4. Addressing Customer Requirements:
5. Solution Positioning and Sales Techniques:
6. Competitor Analysis:

Through this training, technical sellers will acquire the expertise necessary to engage with customers, understand their transactional workload requirements, and effectively position Lenovo and Nutanix solutions as the ideal choice for high-performance, mission-critical applications. By understanding the intricacies of Lenovo and Nutanix offerings in the transactional workload space, technical sellers will be empowered to drive successful sales engagements, build strong customer relationships, and contribute to the growth and success of their organization.

Tags: Cloud, Nutanix, ThinkAgile

Published: 2023-08-18

Length: 60 minutes

**Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DHXD201

## 28. **Empowering Technical Sellers: Accelerating Lenovo and Nutanix Cloud Native-Container Application Solutions**

2023-08-18 | 60 minutes | Employees and Partners

This training abstract outlines a comprehensive program specifically designed to equip technical sellers with the knowledge and expertise needed to effectively promote and sell Lenovo and Nutanix cloud native/container application solutions. By focusing on the integration of Lenovo and Nutanix technologies with modern application development practices, this training enables tech sellers to engage with customers, understand their requirements, and articulate the unique value proposition of Lenovo and Nutanix offerings in the cloud native and containerization landscape.

The training encompasses the following key areas:

1. Cloud Native and Containerization Fundamentals:
2. Lenovo and Nutanix Solutions Overview:
3. Product Portfolio Deep Dive:
4. Addressing Customer Needs:
5. Solution Positioning and Sales Techniques:
6. Competitor Analysis:
7. Technical Demonstration and Proof-of-Concept:

Throughout the training, tech sellers will gain the expertise necessary to engage with customers, understand their unique requirements, and effectively position Lenovo and Nutanix solutions as the go-to choice for cloud native and containerized application needs. By learning the intricacies of Lenovo and Nutanix offerings, technical sellers will be equipped to drive successful sales engagements, strengthen customer relationships, and contribute to the overall growth and success of the organization.

Tags: Business solutions, Cloud, Nutanix, ThinkAgile

Published: 2023-08-18

Length: 60 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DHXC201

## 29. **ThinkAgile Accelerating Cloud Agility: HX Series Technical Presentation**

2023-07-28 | 40 minutes | Employees and Partners

Amalu Santhosh, Lenovo Technical Product Manager, reviews the ThinkAgile HX product portfolio. She will walk you through a technical deep dive into HX workloads and discuss technical details and performance of the latest ThinkAgile HX solutions.

Tags: ThinkAgile

Published: 2023-07-28

Length: 40 minutes

### **Start the training:**

Employee link: [Grow@Lenovo](mailto:Grow@Lenovo)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DHXT201

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

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

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

Course objectives:

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

Tags: Cloud

Published: 2023-07-11

Length: 40 minutes

**Start the training:**

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DCLDS104r2

31. **What's New with Nutanix 2.0? Portfolio and Licensing**

2023-06-08 | 15 minutes | Employees and Partners

Nutanix has updated and simplified their licensing for our joint customers. This course is created to give sales and partners representatives an overview for the recent Nutanix licensing changes and their current options.

Course Objectives:

After completing this course, you should be able to:

- Describe the new Nutanix licensing rollout
- List the new pricing and packaging options

Tags: Cloud, Nutanix, Software Defined Infrastructure (SDI), ThinkAgile

Published: 2023-06-08

Length: 15 minutes

**Start the training:**

Employee link: [Grow@Lenovo](#)

Partner link: [Lenovo 360 Learning Center](#)

Course code: DHXL001

### 32. Data Infrastructure Management - DM Series Storage

2022-10-28 | 25 minutes | Employees Only

This course provides a technical overview of the ThinkSystem DM series products. Course DDMO101 – Lenovo ThinkSystem DM & DE Series Overview is recommended prior to this course.

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

- Recognize the components of the Lenovo Data Management portfolio
- Discuss the features of the Lenovo Data Management components
- Describe the features of the SnapCenter software components

Tags: Sales, Storage, Technical Sales, ThinkSystem

Published: 2022-10-28

Length: 25 minutes

#### Start the training:

Employee link: [Grow@Lenovo](#)

Course code: DDM200

## 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>
- 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  
<https://my.nutanix.com/>
- Lenovo ThinkAgile HX Series Best Recipes  
<https://support.lenovo.com/us/en/solutions/HT515725>
- Lenovo Data Center Support  
<http://datacentersupport.lenovo.com>

## Related product families

Product families related to this document are the following:

- [2-Socket Rack Servers](#)
- [Hyperconverged Infrastructure](#)
- [ThinkAgile HX Series for Nutanix](#)

## Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service. Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.  
8001 Development Drive  
Morrisville, NC 27560  
U.S.A.  
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk. Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2025. All rights reserved.

This document, LP1668, was created or updated on June 6, 2025.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:  
<https://lenovopress.lenovo.com/LP1668>
- Send your comments in an e-mail to:  
[comments@lenovopress.com](mailto:comments@lenovopress.com)

This document is available online at <https://lenovopress.lenovo.com/LP1668>.



## Trademarks

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. A current list of Lenovo trademarks is available on the Web at <https://www.lenovo.com/us/en/legal/copytrade/>.

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo®

AnyBay®

Neptune®

ThinkAgile®

ThinkSystem®

XClarity®

The following terms are trademarks of other companies:

Intel® and Xeon® are trademarks of Intel Corporation or its subsidiaries.

Microsoft® and Hyper-V® are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.