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Product Specification Sheet

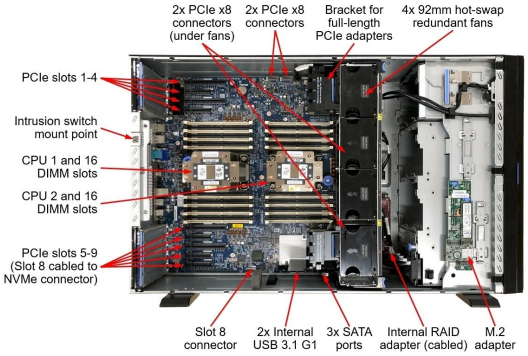
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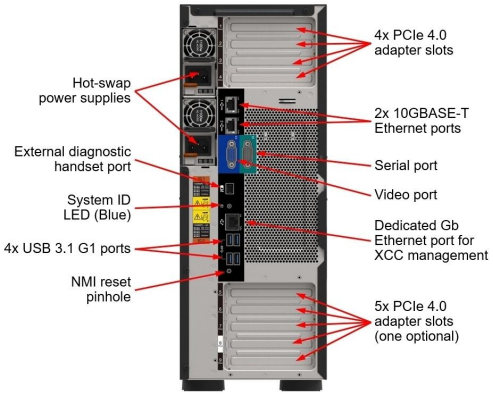
Lenovo ThinkSystem ST650 V2 4U Server, Xeon Silver 4310 2.1GHz, 32GB RAM, No HDD, No OS, 8x 3.5" bays

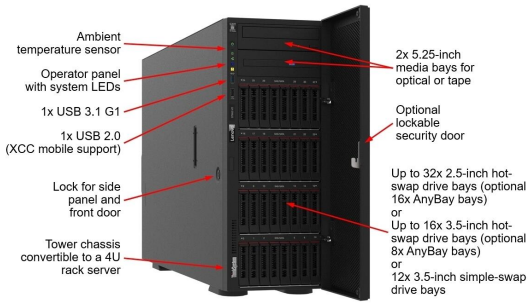
Product Overview

Lenovo ThinkSystem ST650 V2 4U Server, Intel Xeon Silver 4310 2.1GHz up to 3.3GHz 18MB Cache twelve (12) Core Processor with no intergrated Graphics, 1x 32GB DDR4-3200 2Rx4 UDIMM Memory, No Hard Disk Drive included, 8x 3.5" SAS open bay, 2x Media open bay top, No Optical Drive, No RAID controller, 1x 1100W Titanium Power Supply unit, XCC Enterprise, 3 Standard Fans









Specifications

Overview Summary:

The Lenovo ThinkSystem ST650 V2 4U server delivers exceptional reliability and performance for South African businesses looking to enhance their IT infrastructure. Equipped with Intel Xeon Silver 4310 processors, 32GB DDR4 memory, and versatile storage options, this server efficiently handles virtualization, cloud computing, databases, and enterprise applications. Shop now to future-proof your operations with a server built for demanding workloads.

This robust 4U tower server supports scalable memory and multiple storage configurations, including NVMe, SAS, and SATA drives. With redundant power supplies, hot-swap fans, and Lenovo XClarity management tools, it ensures continuous uptime and simplified administration. Buy now to experience enterprise-grade performance and security.

Performance tier: High-end enterprise

Uses: Virtualization, cloud computing, databases, VDI, web services, enterprise applications

Overview:

Lenovo ThinkSystem ST650 V2 4U Server
The Lenovo ThinkSystem ST650 V2 is a robust 4U tower server designed for businesses of all sizes, offering high reliability, advanced management, and strong security. It delivers exceptional performance and flexibility for current workloads and future growth, making it ideal for virtualization, cloud computing, databases, VDI, web services, and enterprise applications.

Description:

This server features dual-socket support for 3rd generation Intel Xeon Scalable processors, up to 36 cores, and 4TB of TruDDR4 memory. It supports Intel Optane Persistent Memory 200 Series, multiple storage configurations including NVMe, SAS, and SATA drives, and offers up to nine PCIe slots for expansion. With redundant power supplies, hot-swap fans, and advanced system monitoring via Lenovo XClarity, the ST650 V2 ensures high uptime, efficient management, and enhanced security for mission-critical workloads.

Features:

High-Performance Processing

- Supports one or two 3rd generation Intel Xeon Scalable processors
- Up to 36 cores and 72 threads per server
- Core speeds up to 3.6 GHz with 250W TDP
- Optimized for multi-threaded workloads and virtualization

Memory and Storage Flexibility

- Up to 32 TruDDR4 DIMMs operating at 3200 MHz
- Maximum 4TB memory using 128GB 3DS RDIMMs
- Supports up to 16 Intel Optane PMem modules for in-memory database applications
- Front-accessible drive bays: - 32x 2.5-inch or 12x 3.5-inch hot-swap bays
- 2x 5.25-inch media bays for additional storage options
- Supports M.2 drives for OS boot or RAID configurations
- NVMe support for high-speed storage performance
- Optional high-speed RAID controllers with 12 Gb SAS connectivity

Graphics and Expansion Options

- Supports up to eight single-width or four double-width GPUs
- PCIe 4.0 expansion slots for high-bandwidth applications
- Two integrated 10 GbE 10GBASE-T ports for fast networking
- Up to nine PCIe slots, eight of which support PCIe 4.0

Reliability and Serviceability

- Designed for 24/7 operation
- Supports hot-swap drives, redundant power supplies, and fans
- Memory protection with SDDC, ADDDC, and memory mirroring
- Light path diagnostics simplify hardware troubleshooting
- Proactive alerts via XClarity Controller for early issue detection
- Built-in diagnostics and UEFI-based provisioning tools reduce service time

Manageability and Security

- Lenovo XClarity Controller and Administrator for remote and local management
- Toolless cover removal for easy upgrades and maintenance
- Optional XCC Advanced and XCC Enterprise for remote control and media mounting
- Unified Extensible Firmware Interface (UEFI) for simplified setup and updates
- Physical security options including lockable front door and chassis intrusion switch
- TPM 2.0 support, Secure Boot, AES-NI encryption, and Intel Trusted Execution Technology
- Administrator and power-on passwords to prevent unauthorized access

Energy Efficiency

- High-efficiency 80 PLUS Platinum and Titanium power supplies
- SSDs consume up to 80% less power than traditional HDDs
- Optimized airflow with hexagonal ventilation for better cooling
- Optional Lenovo XClarity Energy Manager for data center power and thermal management

The Lenovo ThinkSystem ST650 V2 delivers scalable performance, advanced reliability, and efficient management for modern enterprise workloads. Its flexible storage, memory, and expansion options, combined with strong energy efficiency and security features, make it an ideal choice for businesses aiming to future-proof their IT infrastructure.

Specifications:

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Specifications	
Product Code	7Z74A047EA
Feature	ST650 V2
Form Factor	4U Tower with rack convertible
Processor	2x 3rd Gen Intel Xeon Scalable Processor
	up to 36 cores & 250W per CPU
Memory	8 channels per CPU
	32x TruDDR4 (R/3DS) 3200MHz DIMMs
	Up to 1DPC & 2DPC @ 3200MHz, Max 4TB
	2nd Gen Intel Optane Persistent Memory
Disk	Internal M.2 with optional RAID 0/1
	Up to 16x 3.5" HS SAS/SATA (up to 8x optional NVMe SSDs)
	Up to 32x 2.5" HS SAS/SATA (up to 16x optional NVMe SSDs)
	Optional 2x 5.25" drive bays for optical/backup drives

RAID	12Gb SAS/SATA/RAID support
	PCIe 3.0 and PCIe 4.0 adapters
	Onboard SATA support with RAID
	Onboard VROC NVMe support with RAID
	Wider range of 8-, 16- and 32-port RAID adapters
	8- and 16-port HBAs
	NVMe Retimer adapters for 16x NVMe
Networking	2x 10GbE embedded
	1GbE dedicated Management port
PCIe	Up to 9 slots total (1 is optional)
	4x PCIe 4.0 x16 slots
	Up to 4x PCIe x8 (3x Gen4, 1x Gen3)
	1x PCIe 4.0 x4 slot
	Separate M.2 adapter support
GPU	Up to 4x active DW or 8x SW GPU adapters
Management and Security	XClarity Controller with upgrades
	Full XClarity software suite including XClarity Administrator
	Optional intrusion switch and lockable door
	Support for External Diagnostics Handset
	Platform Firmware Resiliency (PFR) hardware Root of Trust
Power Supply	2x Hot-swap PSUs up to 2400W, Platinum
	750W Hot-swap Titanium PSU
	1100W -48V DC PSU (planned)
Detailed Specifications	
Machine types	7Z75 - 1 year warranty
	7Z74 - 3 year warranty
Form factor	Tower or 4U Rack
Processor	One or two third-generation Intel Xeon Scalable processor (formerly codenamed "Ice Lake"). Supports processors up to 36 cores, core speeds of up to 3.6 GHz, and TDP ratings of up to 250W.
Chipset	Intel C621A "Lewisburg" chipset, part of the platform codenamed "Whitley"
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 TruDDR4 RDIMMs and 3DS RDIMMs are supported. DIMM slots are shared between standard system memory and persistent memory. DIMMs operate at up to 3200 MHz at 2 DPC.
Persistent memory	Supports up to 16x Intel Optane Persistent Memory 200 Series modules (8 per processor) installed in the DIMM slots. Persistent memory (Pmem) is installed in combination with system memory DIMMs.

Memory maximum	With RDIMMs: Up to 4TB by using 32x 128GB 3DS RDIMMs
	With Persistent Memory: Up to 5TB by using 16x 64GB 3DS RDIMMs and 16x 256GB Pmem modules (2.5TB per processor)
Memory protection	ECC, SDDC (for x4-based memory DIMMs), ADDDC (for x4-based memory DIMMs, requires Platinum or Gold processors), and memory mirroring.
Disk drive bays	2.5-inch drive bays:
	Up to 32x 2.5-inch hot-swap bays (16x NVMe) plus 2x 5.25-inch media bays
	3.5-inch drive bays:
	Up to 16x 3.5-inch hot-swap bays (8x NVMe) (no media bays)
	Up to 12x 3.5-inch hot-swap bays (8x NVMe) plus 2x 5.25-inch media bays
	Up to 12x 3.5-inch simple-swap bays plus 2x 5.25-inch media bays
	Internal drives for OS boot or drive storage:
	Internal M.2 module supporting up to two M.2 drives
Maximum internal storage	2.5-inch drives:
	491.52TB using 32x 15.36TB 2.5-inch SAS/SATA SSDs
	61.44TB using 16x 3.84TB 2.5-inch NVMe SSDs
	76.8TB using 32x 2.4TB 2.5-inch HDDs
	3.5-inch drives:
	320TB using 16x 20TB 3.5-inch HDDs
	122.88TB using 16x 7.68TB 3.5-inch SAS/SATA SSDs
	30.72TB using 8x 3.84TB 3.5-inch NVMe SSDs
Storage controller	12x onboard SATA ports (Intel VROC SATA RAID, formerly known as Intel RSTe RAID)
	Up to 8x onboard NVMe ports (includes Intel VROC NVMe RAID, with optional license for non-Intel NVMe SSDs)
	NVMe Retimer Adapter (supports Intel VROC NVMe RAID)
	12 Gb SAS/SATA RAID adapters
	8, 16 or 32 ports
	Up to 8GB flash-backed cache
	PCIe 4.0 or PCIe 3.0 host interface
	12 Gb SAS/SATA HBA (non-RAID)
	8-port and 16-port
	PCIe 4.0 or PCIe 3.0 host interface
Optical drive and tape drive bays	Two half-height 5.25-inch media bays, available in most configurations. Supports two of LTO tape drive, RDX drive, or slim DVD-RW optical drive.
Network interfaces	Two onboard 10GBASE-T Ethernet RJ45 ports based on a Broadcom BCM57416 controller. Additional dedicated Gigabit port for remote management via the XClarity Controller (XCC) management processor.

PCI Expansion slots	Up to 9x PCIe slots - 8x PCIe 4.0 slots standard, 1x PCIe 3.0 slot optional (slot 8) All slots are full height, full length (FHFL) with rear access. Slots 4-8 require CPU 2 installed.
	Slot 1: PCIe 4.0 x16 (CPU 1)
	Slot 2: PCIe 4.0 x4 (x8 physical slot) (CPU 1)
	Slot 3: PCIe 4.0 x16 (CPU 1)
	Slot 4: PCIe 4.0 x8 (x8 physical slot) (CPU 2)
	Slot 5: PCIe 4.0 x16 (CPU 2)
	Slot 6: PCIe 4.0 x8 (x8 physical slot) (CPU 2)
	Slot 7: PCIe 4.0 x16 (CPU 2)
	Slot 8: PCIe 3.0 x8 (x8 physical slot) (CPU 2) (optional, cabled to PCIe connector)
	Slot 9: PCIe 4.0 x8 (x8 physical slot) (CPU 1)
	The server also supports the installation of a RAID adapter or HBA in a dedicated area that does not consume any of the PCIe slots. See the location of the Internal RAID adapter (cabled) in the Internal view of the server.
	All nine slots are mounted on the system board. The optional slot, Slot 8, is enabled through a cable, routed from one of the PCIe NVMe onboard connectors. See the I/O expansion section for details.
GPU support	Supports up to 8x single-wide GPUs or up to 4x double-wide GPUs
Ports	Front: 1x USB 3.1 G1 (5 Gb/s) port, 1x USB 2.0 port (also for XCC local management)
	Rear: 2x 10GBASE-T RJ45 Ethernet ports, 4x USB 3.1 G1 (5 Gb/s) ports, 1x VGA video port, 1x DB-9 COM serial port, 1x 1GbE RJ-45 systems management port for XCC remote management, External diagnostics port
	Internal: 1x USB 3.1 G1 connector for operating system or license key purposes
Cooling	Up to 4x single-rotor or dual-rotor hot swap 92 mm fans, configuration dependent. Fans are N+1 redundant. One additional 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 and 2400 W AC options, supporting 220 V AC. 750 W and 1100 W options also support 110V input supply. In China only, all power supply options support 240 V DC.
Video	G200 graphics with 16 MB memory with 2D hardware accelerator, integrated into the XClarity Controller. Maximum resolution is 1920x1200 32bpp at 60Hz.
Hot-swap parts	Drives, power supplies, and fans.
Systems management	Operator panel with status LEDs. Optional External Diagnostics Handset with LCD display. XClarity Controller (XCC) embedded management, XClarity Administrator centralized infrastructure delivery, XClarity Integrator plugins, and XClarity Energy Manager centralized server power management. Optional XClarity Controller Advanced and Enterprise to enable remote control functions.
Security features	Power-on password, administrator's password, Trusted Platform Module (TPM), supporting TPM 2.0. In China only, optional Nationz TPM 2.0. Optional lockable front security door and optional chassis intrusion switch.
Operating systems supported	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi. See the Operating system support section for specifics.

Service and support	Optional service upgrades are available through Lenovo Services: 4-hour or 2-hour response time, 6-hour fix time, 1-year or 2-year warranty extension, software support for Lenovo hardware and some third-party applications.
Dimensions	Width: 175 mm (6.9 in.), height: 462 mm (18.2 in.), depth: 734 mm (28.9 in.). See Physical and electrical specifications for details.
Weight	2.5-inch configuration: 39.28 kg (86.60 lb) maximum
	3.5-inch configuration: 46.23 kg (101.92 lb) maximum

Product Information Online

For the latest product information, availability and purchasing details, please visit the product page:

Product page:
https://www.comx-computers.co.za/7Z74A047EA-Lenovo-ThinkSystem-ST650-V2-4U-Server-Xeon-Silver-4310-2-1GHz-32GB-RAM-p-326958.php

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