



Produtos Intel®

Processadores Intel® para PC, notebooks, servidores e IA

Processador Intel® Xeon® Silver 4210
cache de 13,75 M, 2,20 GHz

Processador Intel® Xeon® Silver 4210
cache de 13,75 M, 2,20 GHz

☐ Adicionar para comparar

Especificações

Baixe as especificações ↓

Essenciais

Coleção de produtos

Processadores escaláveis Intel® Xeon® da 2ª Geração

Codinome

Produtos com denominação anterior Cascade Lake

Segmento vertical

Server

Número do processador

4210

Status

Launched

Data de introdução ⓘ

Q2'19

Litografia ⓘ

14 nm

Preço recomendado para o cliente ⓘ

\$536.00 - \$547.00

Condições de uso ⓘ

Server/Enterprise

Especificações da CPU

Número de núcleos ⓘ

10

Nº de threads ⓘ

20

Frequência turbo max ⓘ

3.20 GHz

Frequência baseada em processador ⓘ

2.20 GHz

Cache ⓘ

13.75 MB

Nº de links de UPI ⓘ

2

TDP ⓘ

85 W

Informações complementares

Opções integradas disponíveis ⓘ	Sim
Descrição resumida do produto	Ver agora

Especificações de memória

Tamanho máximo de memória (de acordo com o tipo de memória) ⓘ	1 TB
Tipos de memória ⓘ	DDR4-2400
Velocidade máxima de memória	2400 MHz
Nº máximo de canais de memória ⓘ	6
Compatibilidade com memória ECC ⓘ	Sim
Memória persistente Intel® Optane™ DC com suporte ⓘ	Não

Opções de expansão

Escalabilidade	2S
Revisão de PCI Express ⓘ	3.0
Nº máximo de linhas PCI Express ⓘ	48

Especificações de encapsulamento

Soquetes suportados ⓘ	FCLGA3647
T _{CASE} ⓘ	78°C
Tamanho do pacote	76.0mm x 56.5mm

Tecnologias avançadas

Intel® Deep Learning Boost (Intel® DL Boost) ⓘ	Sim
Intel® Speed Select Technology – Perfil de desempenho ⓘ	Não
Intel® Speed Select Technology – Frequência básica ⓘ	Não
Intel® Resource Director Technology (Intel® RDT) ⓘ	Sim
Tecnologia Intel® Speed Shift ⓘ	Sim
Tecnologia Intel® Turbo Boost Max 3.0 ⓘ	Não
Tecnologia Intel® Turbo Boost ⓘ	2.0
Elegibilidade da plataforma Intel® vPro™ ⓘ	Sim
Tecnologia Hyper-Threading Intel® ⓘ	Sim
Tecnologia de virtualização Intel® (VT-x) ⓘ	Sim

Tecnologia de virtualização Intel® para E/S dirigida (VT-d) [†] ⓘ	Sim
Intel® VT-x com Tabelas de páginas estendidas (EPT) [†] ⓘ	Sim
Intel® TSX-NI ⓘ	Sim
Intel® 64 [†] ⓘ	Sim
Extensões do conjunto de instruções ⓘ	Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512
Nº de unidades de FMA de AVX-512 ⓘ	1
Tecnologia Enhanced Intel SpeedStep® ⓘ	Sim
Intel® Volume Management Device (VMD - Dispositivo de Gerenciamento de Volume) ⓘ	Sim
Segurança e confiabilidade	
Novas instruções Intel® AES ⓘ	Sim
Intel® Trusted Execution Technology [†] ⓘ	Sim
Bit de desativação de execução [†] ⓘ	Sim
Tecnologia Intel® Run Sure ⓘ	Não
Controle de Execução baseado em Modo (MBE — Mode-based Execute Control) ⓘ	Sim

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Consulte a Ficha técnica para obter definições formais de propriedades e recursos de produtos.

† Este recurso pode não estar disponível em todos os sistemas de computação. Verifique com o fornecedor do sistema para determinar se seu sistema oferece este recurso ou consulte as especificações de seu sistema (motherboard, processador, chipset, alimentação, HDD, controle gráfico, memória, BIOS, drivers, monitor de máquina virtual [VMM], software de plataforma e/ou sistema operacional) para saber sobre a compatibilidade do recurso. A funcionalidade, o desempenho e outros benefícios deste recurso podem variar, dependendo das configurações do sistema.

Os números dos processadores Intel não são indicação de desempenho. Os números dos processadores diferenciam recursos dentro de cada família de processador, e não entre famílias diferentes de processadores. Consulte <https://www.intel.com.br/content/www/br/pt/processors/processor-numbers.html>

para obter mais detalhes.

SKUs "anunciados" ainda não estão disponíveis. Favor consultar a data de lançamento para a disponibilidade no mercado.

O TDP máximo e do sistema se baseiam nos piores casos. O TDP real pode ser inferior, se nem todas as E/Ss para chipsets forem utilizadas.

Frequência máxima de turbo refere-se a frequência máxima do processador de núcleo único que pode ser atingida com a Tecnologia Intel® Turbo Boost. Mais informações estão disponíveis no site <https://www.intel.com/content/www/br/pt/architecture-and-technology/turbo-boost/turbo-boost-technology.html>

Consulte <https://www.intel.com.br/content/www/br/pt/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper-threading>

para obter mais informações, incluindo detalhes sobre quais processadores são compatíveis com a Tecnologia Hyper-Threading Intel®.

Os processadores compatíveis com a computação de 64 bits na arquitetura Intel® requerem BIOS habilitados para arquitetura Intel 64.

Alguns produtos suportam as novas instruções AES com uma atualização da Configuração do processador, em particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Favor entrar em contato com o OEM para o BIOS que inclui a mais recente atualização da Configuração do processador.

Informações sobre a empresa

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PLANILHA DE COMPOSIÇÃO DE CUSTO

ITEM	DESCRIÇÃO DETALHADA DO ITEM
06	Servidor Lenovo SR650 Xeon 4210 10C 32Gb
CUSTO DE AQUISIÇÃO / PRODUÇÃO EM R\$ (A)	
CUSTO DO PRODUTO NO FABRICANTE	63.501,10
CUSTO DA GARANTIA NO FABRICANTE	4.270,78
CUSTO DE SOFTWARE	-
IMPOSTOS E TAXAS EM R\$ (B)	
PIS/COFINS (Apuração Débito menos Crédito)	2.144,23
ICMS (Apuração Débito menos Crédito)	2.781,71
ICMS (Diferencial de Alíquota)	3.035,08
ISS (sobre serviço de garantia do fabricante)	-
I.R e CSLL = 2,20%	1.879,16
TRANSPORTE - CUSTO DE CARGA E DESCARGA EM R\$ (C)	
FRETE	311,78
OUTROS CUSTOS EM R\$ (D)	
DESPESAS ADMINISTRATIVAS	5.402,20
LUCRO R\$ (E)	
LUCRO	5.124,96
VALOR TOTAL DO ITEM (A+B+C+D+E)	R\$ 88.451,00
Valor total R\$ 14.329.062,00 (Quatorze milhões, trezentos e vinte e nove mil e sessenta e dois reais)	

Lenovo ThinkSystem SR650 Server (Xeon SP Gen 1 / Gen 2)

Product Guide

Lenovo ThinkSystem SR650 is an ideal 2-socket 2U rack server for small businesses up to large enterprises that need industry-leading reliability, management, and security, as well as maximizing performance and flexibility for future growth. The SR650 server is designed to handle a wide range of workloads, such as databases, virtualization and cloud computing, virtual desktop infrastructure (VDI), enterprise applications, collaboration/email, and business analytics and big data.

Featuring the second generation of Intel Xeon Processor Scalable Family (Xeon SP Gen 2), the SR650 server offers scalable performance, storage capacity, and I/O expansion. The SR650 server supports up to two processors and up to 3 TB of memory, up to 24x 2.5-inch or 14x 3.5-inch drive bays with an extensive choice of drive technologies, and flexible I/O expansion options with a LOM slot, a dedicated storage controller slot, and up to 6x rear PCIe expansion slots.

The following figure shows the ThinkSystem SR650 with 2.5-inch hot-swap drives.

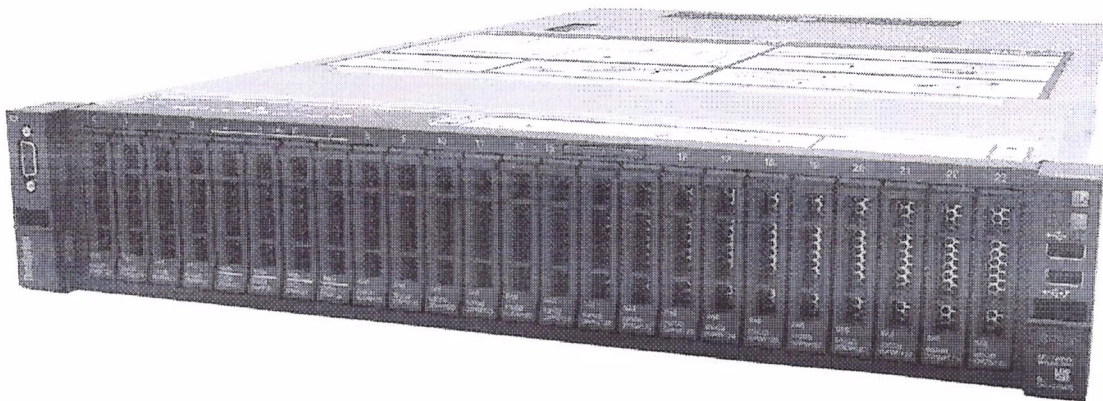


Figure 1. Lenovo ThinkSystem SR650 with 2.5-inch drive bays

Did you know?

The SR650 server offers onboard NVMe PCIe ports that allow direct connections to the U.2 NVMe PCIe SSDs, which frees up I/O slots and helps lower NVMe solution acquisition costs.

The SR650 server is designed to meet ASHRAE A4 standards (up to 45 °C, 113 °F) in select configurations, which enable customers to lower energy costs, while still maintaining world-class reliability.

The SR650 server delivers outstanding memory performance with Performance+ 2933 MHz DIMMs, which is achieved by supporting two-DIMMs-per-channel configurations at speeds up to 10% faster than the Intel specification defines, while still maintaining world-class reliability.

Key features

Combining performance and flexibility, the SR650 server is a great choice for small and medium businesses up to the large enterprise. It can provide outstanding uptime to keep business-critical applications and cloud deployments running safely. Ease of use and comprehensive systems management tools help make deployment easier. Outstanding reliability, availability, and serviceability (RAS) and high-efficiency design improve your business environment and help save operational costs.

Scalability and performance

The SR650 server offers numerous features to boost performance, improve scalability, and reduce costs:

- Improves productivity by offering superior system performance with the second generation of the Intel Xeon Processor Scalable Family with up to 28-core processors, up to 38.5 MB of last level cache (LLC), up to 2933 MHz memory speeds, and up to 10.4 GT/s Ultra Path Interconnect (UPI) links.
 - Support for up to two processors, 56 cores, and 112 threads allows to maximize the concurrent execution of multithreaded applications.
 - Intelligent and adaptive system performance with energy efficient Intel Turbo Boost 2.0 Technology allows CPU cores to run at maximum speeds during peak workloads by temporarily going beyond processor thermal design power (TDP).
 - Intel Hyper-Threading Technology boosts performance for multithreaded applications by enabling simultaneous multithreading within each processor core, up to two threads per core.
 - Intel Virtualization Technology integrates hardware-level virtualization hooks that allow operating system vendors to better utilize the hardware for virtualization workloads.
 - Intel Speed Select Technology provides improvements in server utilization and guaranteed per-core performance service levels with more granular control over processor performance.
 - Intel Deep Learning Boost (Vector Neural Network Instruction set [VNNI]) is designed to deliver significant, more efficient Deep Learning (Inference) acceleration for high-performance Artificial Intelligence (AI) workloads.
 - Intel Advanced Vector Extensions 512 (AVX-512) enable acceleration of enterprise-class and high performance computing (HPC) workloads.
- Helps maximize system performance for data intensive applications with up to 2933 MHz memory speeds and up to 3 TB of memory capacity with 3DS RDIMMs.
- Boosts the performance of data-intensive applications and delivers consistent service levels at scale for virtualized and cloud environments by using the innovative persistent memory technology that provides a unique combination of affordable large memory capacity and non-volatility for up to 7.5 TB of total server memory capacity, including 3DS RDIMMs and DCPMMs (DC persistent memory modules).
- Offers flexible and scalable internal storage in a 2U rack form factor with up to 24x 2.5-inch and 2x 3.5-inch drives for performance-optimized configurations or up to 14x 3.5-inch drives for capacity-optimized configurations, providing a wide selection of SAS/SATA HDD/SSD and PCIe NVMe SSD types and capacities.
- Provides flexibility to use SAS, SATA, or NVMe PCIe drives in the same drive bays with an AnyBay design.
- Provides I/O scalability with a LOM slot, PCIe 3.0 slot for an internal storage controller, and up to six PCI Express (PCIe) 3.0 I/O expansion slots in a 2U rack form factor.
- Reduces I/O latency and increases overall system performance with Intel Integrated I/O Technology that embeds the PCI Express 3.0 controller into the Intel Xeon Processor Scalable Family.

Availability and serviceability

The SR650 server provides many features to simplify serviceability and increase system uptime:

- Offers protection in the event of a non-correctable memory failure with Single Device Data Correction (SDDC, also known as Chipkill, requires x4-based DIMMs), Adaptive Double Device Data Correction (ADDDC, also known as Redundant Bit Steering [RBS], requires x4-based DIMMs and Intel Xeon Gold or Platinum processors), memory mirroring, and memory rank sparing.
- Provides easy access to upgrades and serviceable parts (such as processors, memory DIMMs, and adapter cards) with tool-less cover removal.
- Offers data protection and greater system uptime with hot-swap drives supporting basic or advanced RAID redundancy.
- Provides availability for business-critical applications with redundant hot-swap power supplies and redundant hot-swap system fans.
- Simplifies servicing, speeds up problem resolution, and helps improve system availability with light path diagnostics.
- Allows preventive actions in advance of possible failure, thereby increasing server uptime and application availability with Proactive Platform Alerts (including PFA and SMART alerts) for processors, voltage regulators, memory, internal storage (SAS/SATA HDDs and SSDs, NVMe SSDs, M.2 storage, flash storage adapters), fans, power supplies, RAID controllers, and server ambient and sub-component temperatures.
- Continuously monitors system parameters, triggers alerts, and performs recovery actions in case of failure to minimize downtime with Built-in XClarity Controller (XCC).
- Provides quick access to system status, firmware, network, health, and alerts information via Virtual Operator Panel from the XClarity Mobile App running on the Android or iOS mobile device that is connected to the front USB port with XClarity Controller access.
- Speeds up troubleshooting tasks to reduce service time with diagnostics built into the XClarity Provisioning Manager.

Manageability and security

Powerful systems management features simplify local and remote management of the SR650 server and deliver enterprise-class data protection:

- Provides advanced service processor control, monitoring, and alerting functions with XClarity Controller, a next generation service processor.
- Improves Unified Extensible Firmware Interface (UEFI) system setup, configuration, updates, simplified error handling, and operating system deployment with the embedded XClarity Provisioning Manager.
- Offers XClarity Essentials software tools that can help you set up, use, and maintain the server.
- Increases uptime, reduces costs, and improves productivity through advanced server management capabilities with Lenovo XClarity Administrator that provides comprehensive hardware management.
- Provides on-the-go monitoring and management of devices in XClarity Administrator from anywhere with the Lenovo XClarity mobile app, which can help improve efficiency and reduce downtime risks.
- Centralizes infrastructure resource management with Lenovo XClarity Integrators for VMware vCenter and Microsoft System Center, extending XClarity Administrator features to virtualization management software tools and enabling users to deploy and manage infrastructure end-to-end.
- Offers advanced cryptographic functionality (such as digital signatures and remote attestation) with an integrated Trusted Platform Module (TPM) or optional Trusted Cryptographic Module (TCM) or Nationz TPM (available only in PRC).
- Keeps user data safe with Lenovo Business Vantage, a security software tool suite designed to work with the Trusted Cryptographic Module or Nationz TPM (available only in PRC).
- Offers enterprise-class data protection with advanced RAID and optional self-encrypting drives.
- Provides faster, stronger encryption with industry-standard AES NI support.
- Helps prevent certain classes of malicious buffer overflow attacks with Intel Execute Disable Bit

functionality, when combined with a supporting operating system.

- Enhances security through hardware-based resistance to malicious software attacks with Intel Trusted Execution Technology, allowing an application to run in its own isolated space, protected from all other software running on a system.

Energy efficiency

The SR650 server offers the following energy-efficiency features to save energy, reduce operational costs, increase energy availability, and contribute to the green environment:

- Delivers impressive compute power per watt, featuring 80 PLUS Titanium and Platinum redundant

The following figure shows the front of the SR650 server with up to 24x 2.5-inch drive bays.

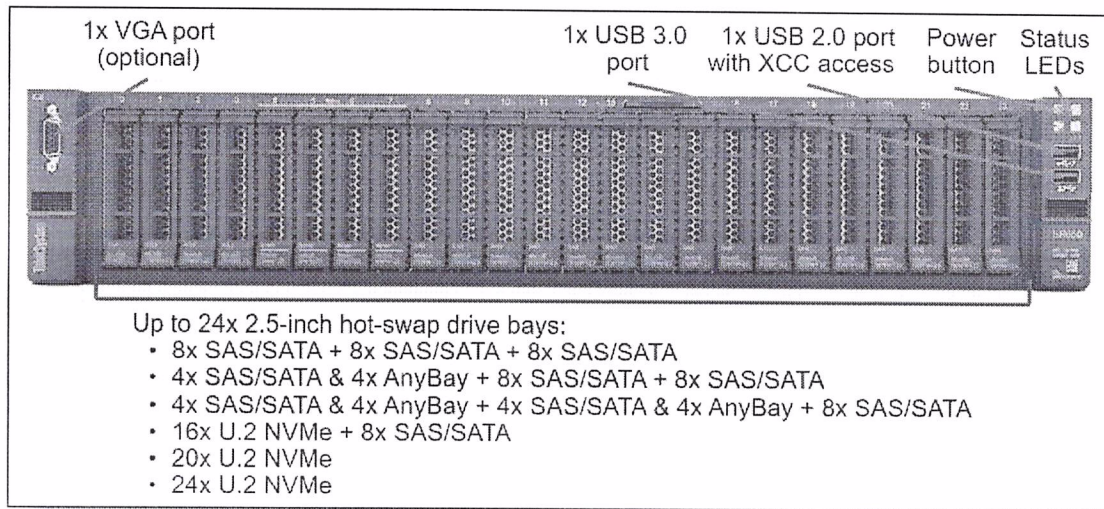


Figure 3. Front view of the SR650: Up to 24x 2.5-inch drive bays

The following figure shows the front of the SR650 server with 8x 3.5-inch drive bays.

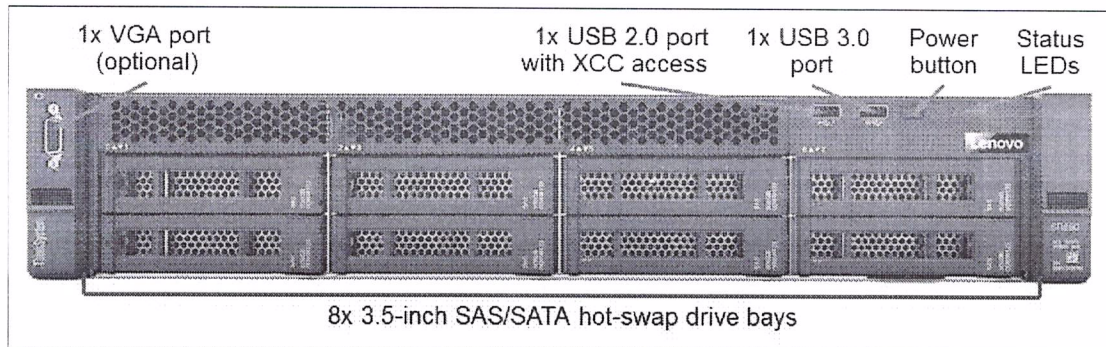


Figure 4. Front view of the SR650: 8x 3.5-inch drive bays

The following figure shows the front of the SR650 server with 12x 3.5-inch drive bays.

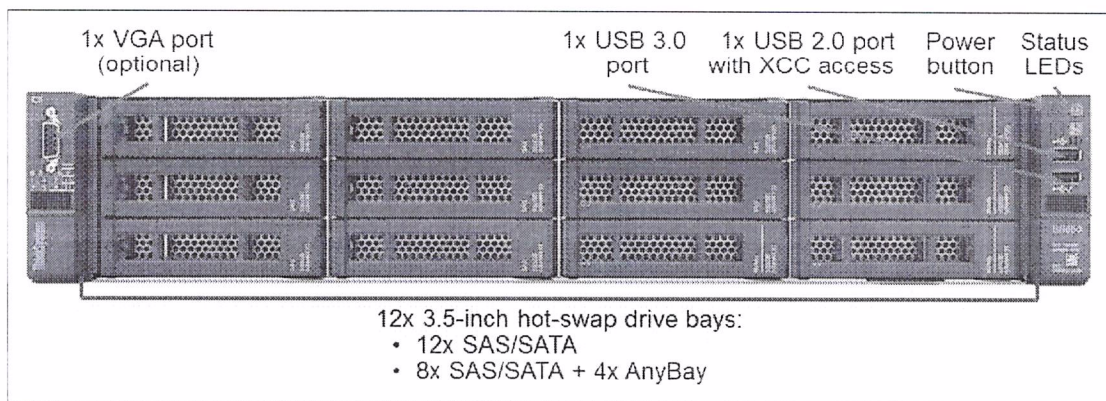


Figure 5. Front view of the SR650: 12x 3.5-inch drive bays

The front of the SR650 server includes the following components:

- Up to 16x 2.5-inch, or 24x 2.5-inch, or 8x 3.5-inch, or 12x 3.5-inch hot-swap drive bays.
- One VGA port (optional).
- One USB 3.0 port.
- One USB 2.0 port with XClarity Controller access.
- Power button.
- Status LEDs.

The following figure shows the rear of the SR650 server.

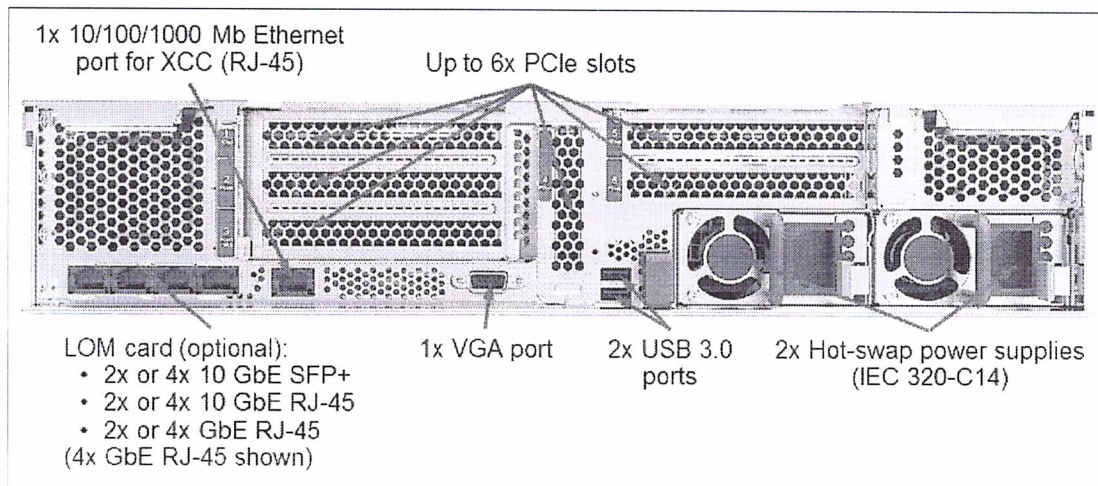


Figure 6. Rear view of the SR650

The rear of the SR650 server includes the following components:

- Up to six PCIe expansion slots (depending on the riser cards selected).
- One LOM card slot.
- One 1 GbE port for XClarity Controller.
- One VGA port.
- Two USB 3.0 ports.
- Up to two hot-swap power supplies.

The following figure shows the locations of key components inside the SR650 server.

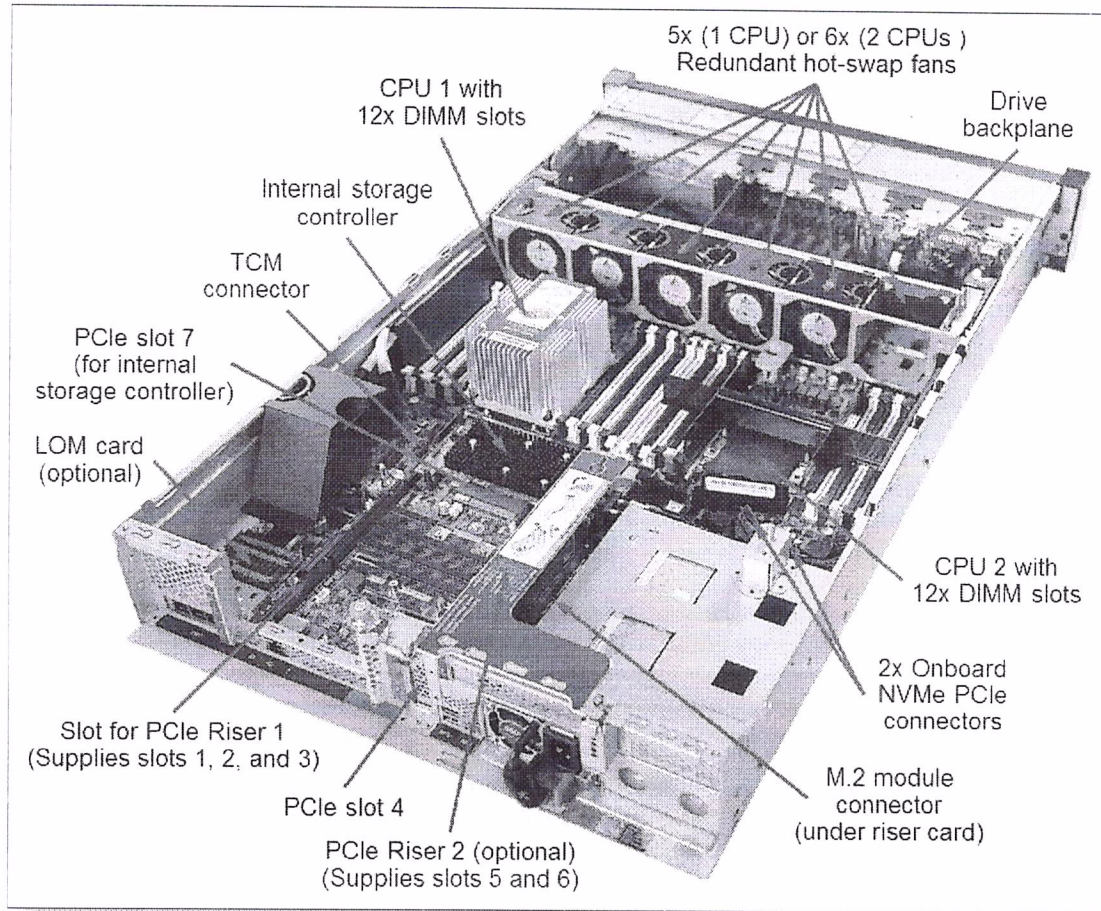


Figure 7. Internal view of the SR650

The following key components are located inside the SR650 server:

- Up to two processors.
- 24 DIMM slots (12 DIMM slots per processor).
- Drive backplanes.
- Two onboard NVMe PCIe connectors.
- One M.2 module connector.
- One LOM card connector.
- Two onboard PCIe slots 4 and 7.
- Two slots for PCIe riser cards.
- One TCM connector.
- Five (one processor) or six (two processors) hot-swap system fans.

System specifications

The following table lists the system specifications for the SR650 server.

Table 1. SR650 system specifications

Attribute	Specification
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Attribute	Specification
Machine types	7X05 - 1 year warranty 7X06 - 3 year warranty
Form factor	2U rack-mount.
Processor	Up to two 2nd Gen Intel Xeon Bronze, Silver, Gold, or Platinum processors: - Up to 28 cores (2.7 GHz core speeds). - Up to 3.9 GHz core speeds (8 cores). - UPI links up to 10.4 GT/s (2 UPI links used). - Up to 38.5 MB cache. - Up to 2933 MHz memory speed. 1st Gen Intel Xeon processors are also supported.
Chipset	Intel C624.
Memory	Up to 24 DIMM sockets (12 DIMMs per processor; six memory channels per processor with two DIMMs per channel). Support for RDIMMs, LRDIMMs (1st Gen processors only), or 3DS RDIMMs. Memory speed up to 2933 MHz depending on the processor selected. Memory types cannot be intermixed.
Persistent memory	Up to 12x TruDDR4 2666 MHz DCPMMs in the DIMM slots. Not supported with 1st Gen Intel Xeon SP processors.
Memory protection	- Processor's integrated memory controllers: Error correction code (ECC), SDDC (for x4-based memory DIMMs), ADDDC (for x4-based memory DIMMs, requires Intel Xeon Gold or Platinum processors), memory mirroring, memory rank sparing, patrol scrubbing, and demand scrubbing. - DCPMM's onboard memory controllers: ECC, SDDC, DDDC, patrol scrubbing, and demand scrubbing. Note: In the configurations with DCPMMs, memory mirroring is supported only in the App Direct mode (other DCPMM modes do not support memory mirroring) and applies only to the RDIMMs or 3DS RDIMMs (DCPMMs are not mirrored). Memory sparing is not supported in the configurations with DCPMMs.
Memory capacity	- Memory DIMMs only: Up to 3 TB with up to 24x 128 GB 3DS RDIMMs (Up to 1.5 TB per processor). - Memory DIMMs and persistent memory modules: - App Direct Mode: Up to 7.5 TB with up to 12x 128 GB 3DS RDIMMs and up to 12x 512 GB DCPMMs (Up to 3.75 TB per processor). - Memory Mode: Up to 6 TB with up to 12x 512 GB DCPMMs (Up to 3 TB per processor). Note: Server configurations with more than 1 TB of memory capacity per socket (including DCPMMs and RDIMMs or 3DS RDIMMs) require processors that support up to 4.5 TB (L-suffix) per socket.

Attribute	Specification
Drive bays	- Up to 16 SFF (front) and 2 LFF (rear) hot-swap drive bays: 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 2x 3.5" SAS/SATA - Up to 24 SFF (front) and 2 LFF (rear) hot-swap drive bays: 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay 16x 2.5" U.2 NVMe PCIe + 8x 2.5" SAS/SATA (factory-installed only) 20x 2.5" U.2 NVMe PCIe 24x 2.5" U.2 NVMe PCIe - Up to 10 LFF SAS/SATA hot-swap drive bays: 8x 3.5" (front) + 2x 3.5" (rear) - Up to 14 LFF hot-swap drive bays: 12x 3.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear) 8x 3.5" SAS/SATA & 4x 3.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)
Internal storage capacity	2.5-inch drives: 368.64TB using 24x 15.36TB 2.5-inch SAS SSDs 368.64TB using 24x 15.36TB 2.5-inch NVMe SSDs 57.6TB using 24x 2.4TB 2.5-inch HDDs 3.5-inch drives: 252TB using 14x 18TB 3.5-inch HDDs 107.52TB using 14x 7.68TB 3.5-inch SAS/SATA SSDs 30.72TB using 4x 7.68TB 3.5-inch NVMe SSDs
Storage controller	6 Gb Onboard SATA AHCI 6 Gb Onboard SATA RAID (Intel RSTe) 12 Gb SAS/SATA RAID adapters with up to 8GB flash-backed cache 12 Gb SAS/SATA HBA (non-RAID) - Onboard PCIe NVMe (with Intel VROC NVMe RAID support for Intel SSDs and optionally non-Intel SSDs) - NVMe Switch Adapters (with Intel VROC NVMe RAID support for Intel SSDs and optionally non-Intel SSDs)
Optical drive bays	None. Support for an external USB DVD RW Optical Disk Drive (See Optical drives).
Network interfaces	- Onboard LOM slot for up to 4x 1/10 Gb Ethernet ports: 2x or 4x 1 GbE RJ-45 ports (no 10/100 Mb support) 2x or 4x 10 GbE RJ-45 ports (no 10/100 Mb support) 2x or 4x 10 GbE SFP+ ports (no 10/100 Mb support) - Optional Mezzanine LOM (ML2) slot for dual-port 10 GbE cards with SFP+ or RJ-45 connectors or single- or dual-port 25 GbE cards with SFP28 connectors. 1x RJ-45 10/100/1000 Mb Ethernet systems management port.

Attribute	Specification
I/O expansion slots	Up to seven slots. Slots 4 and 7 are the fixed slots on the system planar, and the remaining slots depend on the riser cards installed. The slots are as follows: - Slot 1: PCIe 3.0 x16 or PCIe 3.0 x8; full-height, half-length (PCIe x16 slot can be single- or double-wide) - Slot 2: PCIe 3.0 x8; full-height, half-length (not present if Slot 1 is PCIe x16 double-wide or Slot 3 is ML2 x16) - Slot 3: PCIe 3.0 x8, or PCIe 3.0 x16, or ML2 x8, or ML2 x16; full-height, half-length - Slot 4: PCIe 3.0 x8; low profile (vertical slot on system planar) - Slot 5: PCIe 3.0 x16; full-height, half-length - Slot 6: PCIe 3.0 x16; full-height, half-length - Slot 7: PCIe 3.0 x8 (for an internal storage controller) Slots 5 and 6 require the second processor to be installed. Single-wide PCIe x16 Slot 1 requires the second processor to be installed.
Ports	- Front: 1x USB 2.0 port with XClarity Controller access and 1x USB 3.0 port; optional 1x VGA port. - Rear: 2x USB 3.0 ports and 1x VGA port; optional 1x DB-9 serial port.
Cooling	Five (one processor) or six (two processors) hot-swap single-rotor system fans with N+1 redundancy.
Power supply	Up to two redundant hot-swap 550 W, 750 W, or 1100 W (100 - 240 V), or 1600 W (200 - 240 V) High Efficiency Platinum AC power supplies, or 750 W (200 - 240 V) High Efficiency Titanium AC power supplies. HVDC support (PRC only).
Video	Matrox G200e with 16 MB memory integrated into the XClarity Controller. Maximum resolution is 1920x1200 at 60 Hz with 32 bits per pixel.
Hot-swap parts	Drives, power supplies, and fans.
Systems management	XClarity Controller (XCC) Standard, Advanced, or Enterprise (Pilot 4 chip), proactive platform alerts, light path diagnostics, XClarity Provisioning Manager, XClarity Essentials, XClarity Administrator, XClarity Integrators for VMware vCenter and Microsoft System Center, XClarity Energy Manager, Capacity Planner.
Security features	Power-on password, administrator's password, secure firmware updates, Trusted Platform Module (TPM) 1.2 or 2.0 (configurable UEFI setting). Optional lockable front bezel. Optional Trusted Cryptographic Module (TCM) or Nationz TPM (available only in PRC). Optional Lenovo Business Vantage security software (available only in PRC).
Operating systems	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi. See the Operating systems section for specifics.
Warranty	One-year (Machine Type 7X05) or three-year (Machine Type 7X06) customer-replaceable unit (CRU) and onsite limited warranty with 9x5 Next Business Day Parts Delivered.
Service and support	Optional Lenovo Services upgrades: 2-hour or 4-hour response time, 6-hour or 24-hour committed service repair, warranty extension up to 5 years, 1-year or 2-year post-warranty extensions, YourDrive YourData, Enterprise Software Support, and Basic Hardware Installation Services.
Dimensions	Width: 445 mm (17.5 in.), height: 87 mm (3.4 in.), depth: 764 mm (30.1 in.). See Physical specifications for details.
Weight	Minimum configuration: 19 kg (41.9 lb), maximum: 32 kg (70.5 lb)

Models

ThinkSystem SR650 models can be configured by using the [Lenovo Data Center Solution Configurator \(DCSC\)](#).

Configure-to-order (CTO) models are used to create models with factory-integrated server customizations. For CTO models, two base CTO models are available for the SR650 as listed in the following table, CTO1WW and CTOLWW:

- The CTO1WW base CTO model is for general business and is selectable by choosing **General Purpose** mode in DCSC.
- The CTOLWW base model is intended for High Performance Computing (HPC) and Artificial Intelligence (AI) configurations and solutions, including configurations for Lenovo Scalable Infrastructure (LeSI), and is enabled using either the **HPC & AI LeSI Solutions** mode or **HPC & AI ThinkSystem Hardware** mode in DCSC. CTOLWW configurations can also be built using [System x and Cluster Solutions Configurator \(x-config\)](#).

Preconfigured server models may also be available for the SR650, however these are region-specific; that is, each region may define their own server models, and not all server models are available in every region.

The following table lists the base CTO models of the ThinkSystem SR650 server.

Table 2. Base CTO models

Description	Machine Type/Model General purpose	Machine Type/Model for HPC and AI
ThinkSystem SR650 - 3 year Warranty	7X06CTO1WW	7X06CTOLWW
ThinkSystem SR650 - 1 year Warranty	7X05CTO1WW	7X05CTOLWW

For CTO orders, the following table lists the base chassis feature codes for the server.

Table 3. Base chassis for CTO models

Feature code	Description
BMN6	ThinkSystem SR650 2.5" Chassis with 8, 16 or 24 Bays v2
AUVV	ThinkSystem SR650 2.5" Chassis with 8, 16 or 24 Bays
AUVW	ThinkSystem SR650 3.5" Chassis with 8 or 12 Bays
BMNE	ThinkSystem SR650 2.5" Chassis with 8 or 16 Bays v2
AUVX	ThinkSystem SR650 2.5" Chassis with 8 or 16 Bays

The following tables list the available models, grouped by region.

- Models for Australia and New Zealand
- Models for South East Asian countries (ASEAN)
- Models for Brazil
- Models for EMEA region
- Models for Hong Kong, Taiwan, Korea (HTK)
- Models for India
- Models for Japan
- Models for Latin American countries (except Brazil)
- Models for USA and Canada

Refer to the Specifications section for information about standard features of the server.

Common to all models:

- All models indicated as having the 750W power supply are using the Platinum power supply

Models for Australia and New Zealand

Table 4. Models for Australia and New Zealand

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
Standard models with a 3-year warranty (machine type 7X06)										
7X06A0EHAU	1x Bronze 3204 6C 85W 1.9G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EKAU	1x Bronze 3204 6C 85W 1.9G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EJAU	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0ELAU	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0E2AU	1x Silver 4210 10C 85W 2.2G	1x 32GB 2933	530-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0EPAU	1x Silver 4210 10C 85W 2.2G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EUAU	1x Silver 4210 10C 85W 2.2G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0ECAU	1x Silver 4214 12C 85W 2.2G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0ESAU	1x Silver 4214 12C 85W 2.2G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0E5AU	1x Silver 4215 8C 85W 2.5G	1x 32GB 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0EFAU	1x Silver 4215 8C 85W 2.5G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0ERAU	1x Silver 4215 8C 85W 2.5G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0DYAU	1x Silver 4216 16C 100W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0E6AU	1x Silver 4216 16C 100W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0F0AU	1x Silver 4216 16C 100W 2.1G	1x 32GB 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0F3AU	1x Silver 4216 16C 100W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EDAU	1x Gold 5215 10C 85W 2.5G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EGAU	1x Gold 5215 10C 85W 2.5G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EYAU	1x Gold 5217 8C 115W 3.0G	1x 32GB 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0F2AU	1x Gold 5217 8C 115W 3.0G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0F8AU	1x Gold 5217 8C 115W 3.0G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
7X06A0EMAU	1x Gold 5218 16C 125W 2.3G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0F4AU	1x Gold 5218 16C 125W 2.3G	1x 32GB 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0F7AU	1x Gold 5218 16C 125W 2.3G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0DZAU	1x Gold 5220 18C 125W 2.2G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EEAU	1x Gold 5220 18C 125W 2.2G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0F5AU	1x Gold 6230 20C 125W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0F6AU	1x Gold 6230 20C 125W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0E1AU	1x Gold 6240 18C 150W 2.6G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0F1AU	1x Gold 6240 18C 150W 2.6G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0E7AU	1x Gold 6242 16C 150W 2.8G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EVAU	1x Gold 6242 16C 150W 2.8G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EQUAU	1x Gold 6244 8C 150W 3.6G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0E9AU	1x Gold 6248 20C 150W 2.5G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EAAU	1x Gold 6248 20C 150W 2.5G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0E8AU	1x Gold 6252 24C 150W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0ENAU	1x Gold 6252 24C 150W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0EBAU	1x Gold 6254 18C 200W 3.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
TopSeller models with a 3-year warranty (machine type 7X06)										
7X06A0EWAU	1x Bronze 3204 6C 85W 1.9G	1x 16GB 2Rx8 2933	530-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0ETAU	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2933	530-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0EZAU	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0KBAU	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2666	930-8i	8x 3.5" SAS/8, Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide CMA
7X06A0KCAU	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2666	930-16i 4GB	12x 3.5" SAS/12, Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide CMA
7X06A0PLAU	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2933	Option	Option 24x 2.5", Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Yes	Ent	Slide CMA
7X06A0E0AU	1x Silver 4210 10C 85W 2.2G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA
7X06A0E3AU	1x Silver 4210 10C 85W 2.2G	1x 32GB 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Ent	Slide CMA