

# Lenovo ThinkSystem SR665 Server

## Product Guide

The Lenovo ThinkSystem SR665 is a 2-socket 2U server that features the AMD EPYC 7002 "Rome" and AMD EPYC 7003 "Milan" families of processors. With up to 64 cores per processor and support for the new PCIe 4.0 standard for I/O, the SR665 offers the ultimate in two-socket server performance in a 2U form factor. The server is ideal for dense workloads that can take advantage of GPU processing and high-performance NVMe drives.

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



Figure 1. Lenovo ThinkSystem SR665

### Did you know?

The SR665 server is a very configuration-rich offering, supporting 28 different drive bay configurations in the front, middle and rear of the server and 5 different slot configurations at the rear of the server. This level of flexibility ensures that you can configure the server exactly the way your workload requires.

The server has been designed to take advantage of the features of the EPYC 7002 and EPYC 7003 processors, such as the full performance of 280W 64-core processors, support for 3200 MHz memory and PCIe Gen 4.0 support. Competitive servers that are based on the older EPYC 7001 "Naples" designs may not be able to offer these performance features.

## Key features

Combining performance and flexibility, the SR665 server is a great choice for enterprises of all sizes. The server offers a broad selection of drive and slot configurations 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.

## Scalability and performance

The SR665 offers numerous features to boost performance, improve scalability and reduce costs:

- Supports the AMD EPYC 7002 and EPYC 7003 families family of processors
- Supports processors with up to 64 cores and 128 threads, core speeds of up to 4.1 GHz, and TDP ratings of up to 280W.
- Support for up to 32 TruDDR4 memory DIMMs with two processors (16 DIMMs per processor). Each processor has 8 memory channels and 2 DIMMs per channel. With 1 DIMM installed per channel (8 DIMMs total), memory operates at 3200 MHz. Using Performance+ RDIMMs, the server supports 2 DIMMs per channel (16 DIMMs total) operating at 3200 MHz.
- Using 256GB 3DS RDIMMs, the server supports up to 8TB of system memory.
- Supports up to eight single-width GPUs or three 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).
- Supports 20x 3.5-inch drive bays for lower-cost high-capacity HDD storage. 2.5-inch and 3.5-inch drive bays can be mixed if desired.
- Supports 16x NVMe drives without oversubscription of PCIe lanes (1:1 connectivity), or up to 32 NVMe drives with a 1:2 oversubscription. The use of NVMe drives maximizes drive I/O performance, in terms of throughput, bandwidth, and latency.
- Supports 12x SATA drives using the onboard SATA controller (no additional adapter needed), enabling lower cost, high capacity storage solution for cold storage workloads.
- Supports high-speed RAID controllers from Broadcom providing 12 Gb SAS connectivity to the drive backplanes. A variety of PCIe 3.0 and PCIe 4.0 RAID adapters are available.
- Supports up to two externally accessible 7mm hot-swap drives with RAID functionality for operating system boot functions or data storage
- Supports M.2 drives for convenient operating system boot functions or data storage. Available M.2 adapters support either one M.2 drive or two M.2 drives in a RAID 1 configuration for performance and reliability.
- The server has a dedicated industry-standard OCP 3.0 small form factor (SFF) slot, with a PCIe 4.0 x16 interface, supporting a variety of Ethernet network adapters. Simple-swap mechanism with thumbscrews and pull-tab enables tool-less installation and removal of the adapter. Supports shared BMC network sideband connectivity to enable out-of-band systems management.
- The server offers PCI Express 4.0 I/O expansion capabilities that doubles the theoretical maximum bandwidth of PCIe 3.0 (16GT/s in each direction for PCIe 4.0, compared to 8 GT/s with PCIe 3.0). A PCIe 4.0 x16 slot provides 64 GB/s bandwidth, enough to support a 200GbE network connection.
- Up to eight PCIe 4.0 slots, all with rear access, plus an internal bay for a cabled RAID adapter or HBA, plus a slot dedicated to the OCP adapter.

## Availability and serviceability

The SR665 provides many features to simplify serviceability and increase system uptime:

- The server uses ECC memory and supports memory RAS features including Single Device Data Correction (SDDC, also known as Chipkill), Patrol/Demand Scrubbing, DRAM Address Command Parity with Replay, and DRAM Uncorrected ECC Error Retry.
- The server offers hot-swap drives, supporting RAID redundancy for data protection and greater system uptime.
- Available M.2 RAID Boot Adapters support RAID-1 which can enable two SATA or two NVMe M.2 drives to be configured as a redundant pair.
- The server has up to two hot-swap redundant power supplies and up to six hot-swap redundant fans to provide availability for business-critical applications.
- The power-source-independent light path diagnostics uses LEDs to lead the technician to failed (or failing) components, which simplifies servicing, speeds up problem resolution, and helps improve system availability.
- Solid-state drives (SSDs) offer more reliability 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, RAID controllers, 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 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 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, 9 x 5 next business day. Optional service upgrades are available.

## Manageability and security

Systems management features simplify local and remote management of the SR665:

- The server includes an XClarity Controller (XCC) to monitor server availability. Optional upgrade to XCC Advanced to provide remote control (keyboard video mouse) functions. Optional upgrade to XCC Enterprise enables the additional support for the mounting of remote media files (ISO and IMG image files), boot capture, and power capping.
- Lenovo XClarity Administrator offers comprehensive hardware management tools that help to increase uptime, reduce costs and improve productivity through advanced server management capabilities.
- UEFI-based Lenovo XClarity Provisioning Manager, accessible from F1 during boot, provides

system inventory information, graphical UEFI Setup, platform update function, RAID Setup wizard, operating system installation function, and diagnostic functions.

- Support for Lenovo XClarity Energy Manager which captures real-time power and temperature data from the server and provides automated controls to lower energy costs.
- An integrated industry-standard Unified Extensible Firmware Interface (UEFI) enables improved setup, configuration, and updates, and simplifies error handling.
- Support for industry standard management protocols, IPMI 2.0, SNMP 3.0, Redfish REST API, serial console via IPMI
- An integrated hardware Trusted Platform Module (TPM) supporting TPM 2.0 enables advanced cryptographic functionality, such as digital signatures and remote attestation.
- Administrator and power-on passwords help protect from unauthorized access to the server.
- Supports AMD Secure Root-of-Trust, Secure Run and Secure Move features to minimize potential attacks and protect data as the OS is booted, as applications are run and as applications are migrated from server to server.
- Supports Secure Boot to ensure only a digitally signed operating system can be used.
- Industry-standard Advanced Encryption Standard (AES) NI support for faster, stronger encryption.
- Additional physical security features are a chassis intrusion switch (standard in all models) and a lockable front bezel (optional).

### **Energy efficiency**

The SR665 offers the following energy-efficiency features to save energy, reduce operational costs, and increase energy availability:

- Energy-efficient planar components help lower operational costs.
- High-efficiency power supplies with 80 PLUS Platinum and Titanium certifications
- Low-voltage 1.2 V DDR4 memory offers energy savings compared to 1.35 V and 1.5 V DDR3 DIMMs.
- 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 and analysis to help achieve lower heat output and reduced cooling needs.

## Components and connectors

The following figure shows the front of the server.

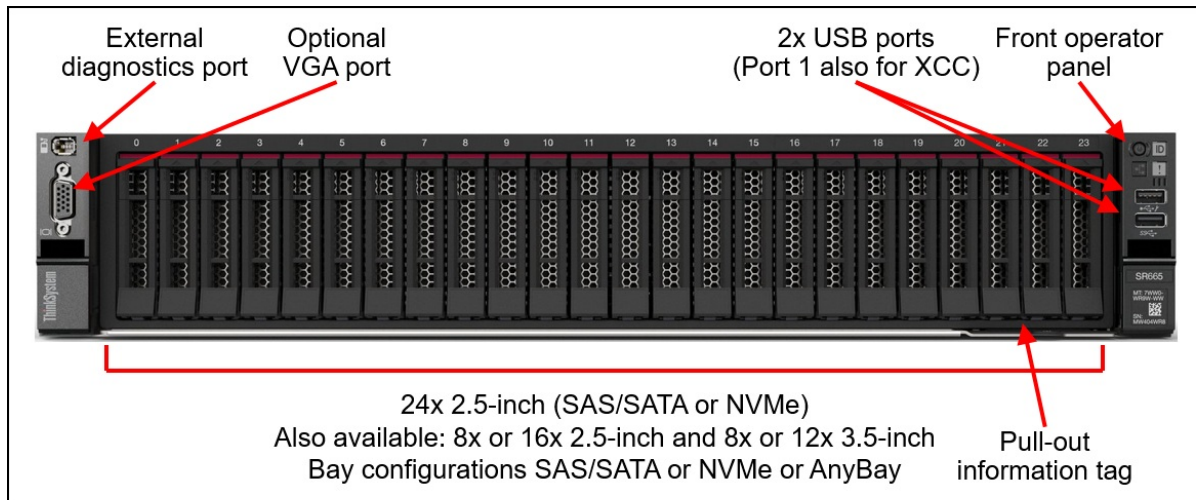


Figure 2. Front view of the Lenovo ThinkSystem SR665

The following figure shows the components visible from the rear of the server. 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, or 7mm drive bays.

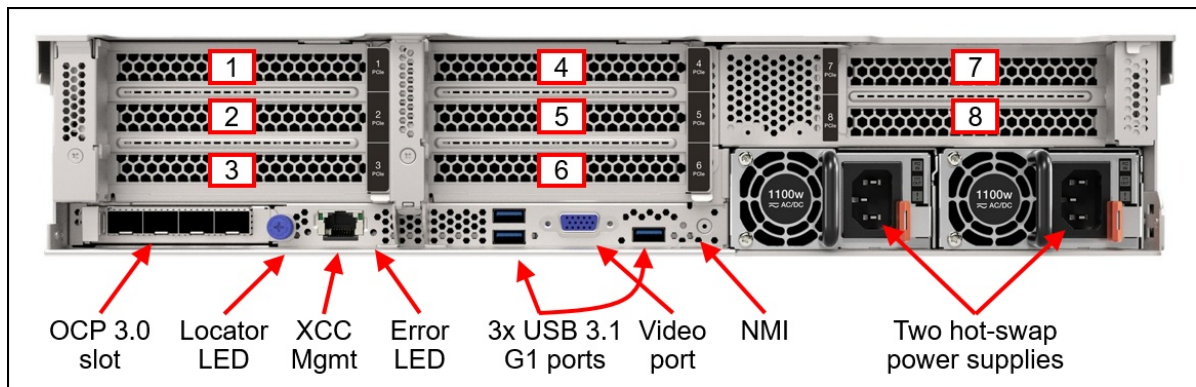


Figure 3. Rear view of the Lenovo ThinkSystem SR665 (configuration with eight PCIe slots)

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

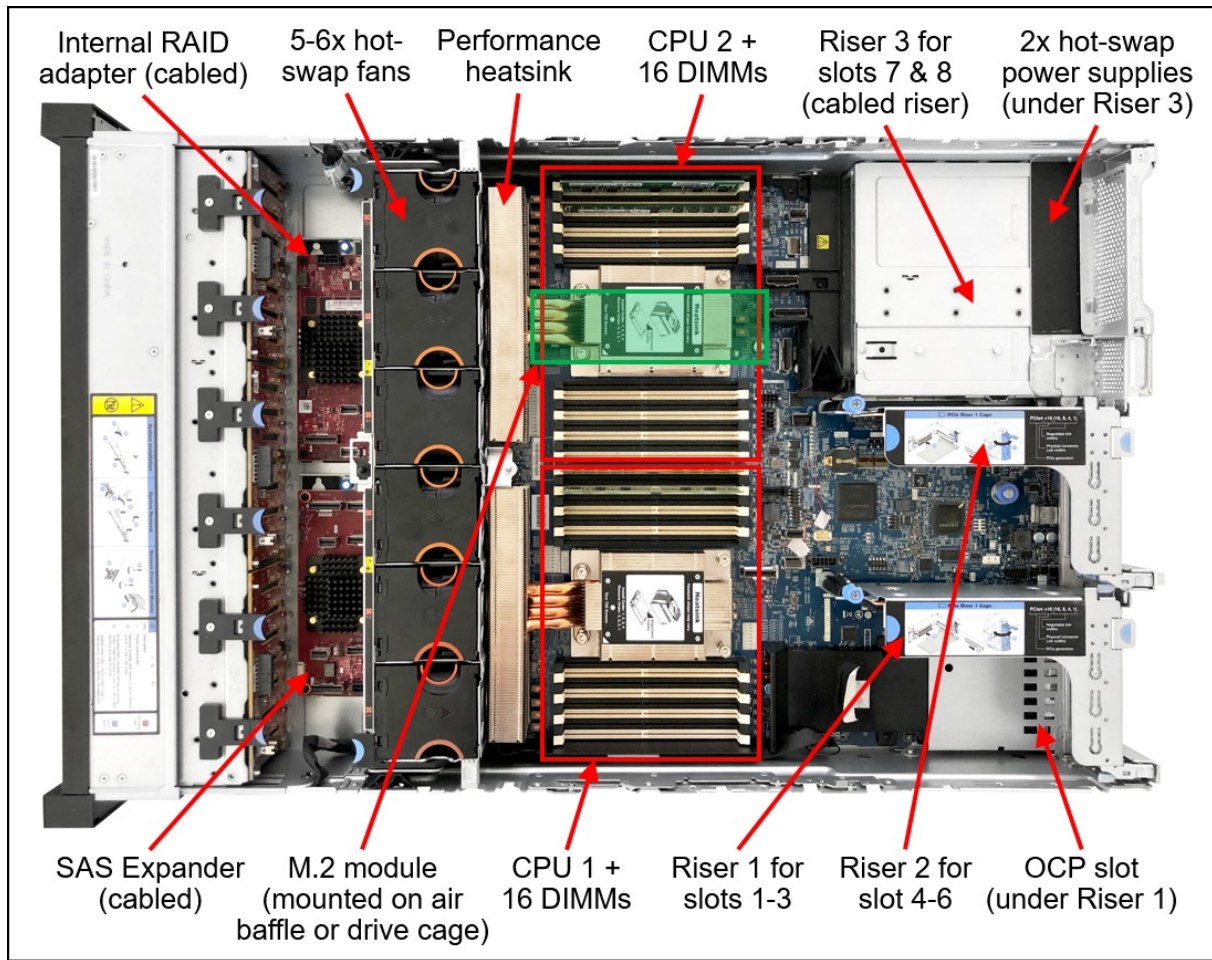


Figure 4. Internal view of the Lenovo ThinkSystem SR665

## System architecture

The following figure shows the architectural block diagram of the SR665, showing the major components and their connections.

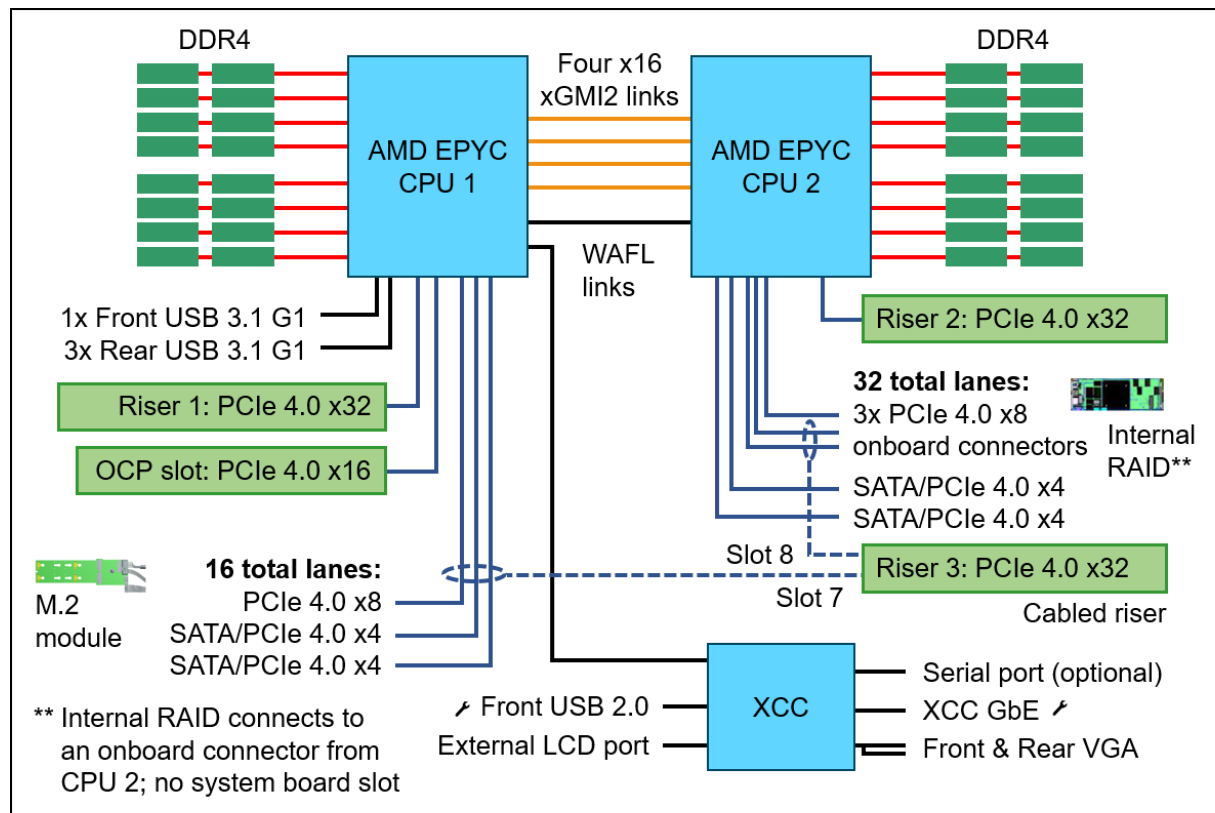


Figure 5. SR665 system architectural block diagram

## Standard specifications

The following table lists the standard specifications.

Table 1. Standard specifications

| Components    | Specification  |
|---------------|--|
| Machine types | 7D2W - 1 year warranty<br>7D2V - 3 year warranty   |
| Form factor   | 2U rack.   |
| Processor     | One or two AMD EPYC 7002 Series processors (formerly codenamed "Rome") or AMD EPYC 7003 Series processors (formerly codenamed "Milan"). Supports processors up to 64 cores, core speeds of up to 4.1 GHz, and TDP ratings of up to 280W. |
| Chipset       | Not applicable (platform controller hub functions are integrated into the processor)   |

| Components               | Specification   |
|--------------------------|---|
| Memory                   | <p>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:</p> <ul style="list-style-type: none"> <li>● Performance+ RDIMMs: 1 DPC at 3200 MHz, 2 DPC at 3200 MHz</li> <li>● RDIMMs: 1 DPC at 3200 MHz, 2 DPC at 2933 MHz</li> <li>● 3DS RDIMMs: 1 DPC at 2933 MHz, 2 DPC at 2666 MHz</li> </ul>   |
| Memory maximum           | Up to 8TB with 32x 256GB 3DS RDIMMs   |
| Persistent memory        | Not supported.  |
| Memory protection        | ECC, SDDC, Patrol/Demand Scrubbing, DRAM Address Command Parity with Replay, DRAM Uncorrected ECC Error Retry, Post Package Repair  |
| Disk drive bays          | <p>Up to 20x 3.5-inch or 40x 2.5-inch hot-swap drive bays:</p> <ul style="list-style-type: none"> <li>● Front bays can be 3.5-inch (8 or 12 bays) or 2.5-inch (8, 16 or 24 bays)</li> <li>● Middle bays can be 3.5-inch (4 bays) or 2.5-inch (8 bays)</li> <li>● Rear bays can be 3.5-inch (2 or 4 bays) or 2.5-inch (4 or 8 bays)</li> <li>● Combinations of SAS/SATA, NVMe, or AnyBay (supporting SAS, SATA or NVMe) are available</li> </ul> <p>The server also supports these drives for OS boot or drive storage:</p> <ul style="list-style-type: none"> <li>● Two 7mm drives at the rear of the server (in addition to any 2.5-inch or 3.5-inch drive bays)</li> <li>● Internal M.2 module supporting up to two M.2 drives</li> </ul> <p>See <a href="#">Supported drive bay combinations</a> for details.</p>  |
| Maximum internal storage | <ul style="list-style-type: none"> <li>● 2.5-inch drives: <ul style="list-style-type: none"> <li>○ 614.4TB using 40x 15.36TB 2.5-inch SAS/SATA SSDs</li> <li>○ 491.52TB using 32x 15.36TB 2.5-inch NVMe SSDs</li> <li>○ 96TB using 40x 2.4TB 2.5-inch HDDs</li> </ul> </li> <li>● 3.5-inch drives: <ul style="list-style-type: none"> <li>○ 360TB using 20x 18TB 3.5-inch HDDs</li> <li>○ 153.6TB using 20x 7.68TB 3.5-inch SAS/SATA SSDs</li> <li>○ 76.8TB using 12x 6.4TB 3.5-inch NVMe SSDs</li> </ul> </li> </ul>   |
| Storage controller       | <ul style="list-style-type: none"> <li>● Onboard NVMe and NVMe Switch Adapters (no RAID)</li> <li>● Onboard SATA (no RAID)</li> <li>● 12 Gb SAS/SATA RAID adapters: <ul style="list-style-type: none"> <li>○ RAID 530i-8i (cacheless) supports RAID 0, 1, 10, 5, 50</li> <li>○ RAID 530i-16i (cacheless) supports RAID 0, 1, 10</li> <li>○ RAID 930-8i with 2GB flash-backed cache supports RAID 0, 1, 10, 5, 50, 6, 60</li> <li>○ RAID 930-16i with 4GB flash-backed cache supports RAID 0, 1, 10, 5, 50, 6, 60</li> <li>○ RAID 940-8i with 4GB or 8GB flash-backed cache supports RAID 0, 1, 10, 5, 50, 6, 60</li> <li>○ RAID 940-16i with 4GB or 8GB flash-backed cache supports RAID 0, 1, 10, 5, 50, 6, 60</li> <li>○ RAID 940-32i with 8GB flash-backed cache supports RAID 0, 1, 10, 5, 50, 6, 60</li> </ul> </li> <li>● 12 Gb SAS/SATA non-RAID: <ul style="list-style-type: none"> <li>○ 430-8i or 440-8i HBAs</li> <li>○ 430-16i or 440-16i HBAs</li> </ul> </li> </ul> |



| Components                  | Specification   |
|-----------------------------|---|
| Optical drive bays          | No internal optical drive.  |
| Tape drive bays             | No internal backup drive.   |
| Network interfaces          | Dedicated OCP 3.0 SFF slot with PCIe 4.0 x16 host interface. Supports a variety of 2-port and 4-port adapters with 1GbE, 10GbE and 25GbE network connectivity. One port can optionally be shared with the XClarity Controller (XCC) management processor for Wake-on-LAN and NC-SI support.   |
| PCI Expansion slots         | <p>Up to 8x PCIe 4.0 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 4-8 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> |
| Ports                       | <p>Front: 1x USB 3.1 G1 (5 Gb/s) port, 1x USB 2.0 port (also for XCC local management), External diagnostics port, optional VGA port.</p> <p>Rear: 3x USB 3.1 G1 (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 3.1 G1 connector for operating system or license key purposes</p>  |
| Cooling                     | Up to 6x N+1 redundant hot swap 60 mm fans, configuration dependent. One fan integrated in each power supply.   |
| Power supply                | Up to two hot-swap redundant AC power supplies, 80 PLUS Platinum or 80 PLUS Titanium certification. 500 W, 750 W, 1100 W and 1800 W AC options, supporting 220 V AC. 500 W, 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                       | 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. Models with 8x or 16x 2.5-inch front drive bays can optionally support an Integrated Diagnostics Panel. 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           | Chassis intrusion switch, Power-on password, administrator's password, Trusted Platform Module (TPM), supporting TPM 2.0. Servers with EPYC 7002 processors also support TPM 1.2. In China only, optional Nationz TPM 2.0. Optional lockable front security bezel.  |
| Operating systems supported | Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESXi. See the <a href="#">Operating system support</a> section for specifics.  |
| Limited warranty            | Three-year or one-year (model dependent) customer-replaceable unit and onsite limited warranty with 9x5 next business day (NBD).  |

| Components          | Specification  |
|---------------------|--|
| 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: 445 mm (17.5 in.), height: 87 mm (3.4 in.), depth: 764 mm (30.1 in.). See <a href="#">Physical and electrical specifications</a> for details.   |
| Weight              | Maximum: 38.8 kg (85.5 lb)   |

## Models

ThinkSystem SR665 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 SR665 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 SR665, 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 SR665 server.

Table 2. Base CTO models

| Description                         | Machine Type/Model<br>General purpose | Machine Type/Model<br>for HPC and AI |
|-------------------------------------|---------------------------------------|--------------------------------------|
| ThinkSystem SR665 - 3 year Warranty | 7D2VCTO1WW                            | 7D2VCTOLWW                           |
| ThinkSystem SR665 - 1 year Warranty | 7D2WCTO1WW                            | 7D2WCTOLWW                           |

Models of the SR665 are defined based on whether the server has 2.5-inch drive bays at the front (called the 2.5-inch chassis) or whether it has 3.5-inch drive bays at the front (called the 3.5-inch chassis). For models, the feature codes for these chassis bases are as listed in the following table.

Table 3. Chassis base feature codes

| Feature code | Description                                       |
|--------------|---|
| B8LZ         | ThinkSystem 2U 2.5" Chassis with 8, 16 or 24 Bays |
| B8M0         | ThinkSystem 2U 3.5" Chassis with 8 or 12 Bays     |

There are two system boards for the SR665, which will be derived by the configurator based on the selection of processor and whether the configuration includes the NVIDIA A100.

Table 4. Motherboard feature codes (CTO orders)

| Feature code | Description  |
|--------------|--|
| B8L1         | ThinkSystem SR665 MB   |
| BF6Z         | ThinkSystem SR665 2U Refresh MB<br>(required for EPYC 7003 processors and NVIDIA A100 GPU) |

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 EMEA countries](#)
- [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 5. Models for Australia and New Zealand

| Model   | AMD EPYC processor†      | Memory     | RAID   | Drive bays              | OCP           | Slots                   | Power supply | Front VGA | XCC | Fans       | Rail kit |
|---|--------------------------|------------|--------|-------------------------|---------------|-------------------------|--------------|-----------|-----|------------|----------|
| Standard models with a 3-year warranty (machine type 7D2V)        |                          |            |        |                         |               |                         |              |           |     |            |          |
| <b>Standard models with second-generation AMD EPYC processors</b> |                          |            |        |                         |               |                         |              |           |     |            |          |
| 7D2VA01TAU  | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02EAU  | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02KAU  | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA01VAU  | 1x 7272 12C<br>120W 2.6G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA029AU  | 1x 7272 12C<br>120W 2.6G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02BAU  | 1x 7272 12C<br>120W 2.6G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA01RAU  | 1x 7282 16C<br>120W 2.4G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA01XAU  | 1x 7282 16C<br>120W 2.4G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA01ZAU  | 1x 7282 16C<br>120W 2.4G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA01PAU  | 1x 7352 24C<br>155W 2.3G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |
| 7D2VA027AU  | 1x 7352 24C<br>155W 2.3G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |

| Model  | AMD EPYC processor†      | Memory     | RAID          | Drive bays              | OCP           | Slots                   | Power supply | Front VGA | XCC | Fans       | Rail kit |
|--|--------------------------|------------|---------------|-------------------------|---------------|-------------------------|--------------|-----------|-----|------------|----------|
| 7D2VA02HAU   | 1x 7352 24C<br>155W 2.3G | 1x<br>16GB | 930-8i        | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |
| TopSeller models with a 3-year warranty (machine type 7D2V)        |                          |            |               |                         |               |                         |              |           |     |            |          |
| <b>TopSeller models with third-generation AMD EPYC processors</b>  |                          |            |               |                         |               |                         |              |           |     |            |          |
| 7D2VA04DAU   | 1x 7313 16C<br>155W 3.0G | 1x<br>32GB | Option        | 8x 2.5" SAS<br>Open bay | Open          | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Ent | 5x<br>Std  | Slide    |
| <b>TopSeller models with second-generation AMD EPYC processors</b> |                          |            |               |                         |               |                         |              |           |     |            |          |
| 7D2VA02TAU   | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Option   |
| 7D2VA02ZAU   | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 530-8i        | 8x 2.5" SAS<br>Open bay | Open          | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Fric     |
| 7D2VA030AU   | 1x 7252 8C<br>120W 3.1G  | 1x<br>32GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Option   |
| 7D2VA03WAU   | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |
| 7D2VA02YAU   | 1x 7262 8C<br>155W 3.2G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open          | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Fric     |
| 7D2VA031AU   | 1x 7262 8C<br>155W 3.2G  | 1x<br>32GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Option   |
| 7D2VA02XAU   | 1x 7282 16C<br>120W 2.4G | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open          | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Fric     |
| 7D2VA032AU   | 1x 7282 16C<br>120W 2.4G | 1x<br>32GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Option   |
| 7D2VA03XAU   | 1x 7282 16C<br>120W 2.4G | 1x<br>32GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |
| 7D2VA02WAU   | 1x 7302 16C<br>155W 3.0G | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open          | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Fric     |
| 7D2VA033AU   | 1x 7302 16C<br>155W 3.0G | 1x<br>32GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Option   |
| 7D2VA02UAU   | 1x 7402 24C<br>180W 2.8G | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open          | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Fric     |
| 7D2VA02VAU   | 1x 7402 24C<br>180W 2.8G | 1x<br>32GB | Option        | Option 2.5"<br>Open bay | Open          | Open                    | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Option   |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency

## Models for South East Asian countries (ASEAN)

Table 6. Models for South East Asian countries (ASEAN)

| Model   | AMD EPYC processor†      | Memory     | RAID   | Drive bays              | OCP           | Slots                   | Power supply | Front VGA | XCC | Fans       | Rail kit |
|---|--------------------------|------------|--------|-------------------------|---------------|-------------------------|--------------|-----------|-----|------------|----------|
| Standard models with a 3-year warranty (machine type 7D2V)        |                          |            |        |                         |               |                         |              |           |     |            |          |
| <b>Standard models with second-generation AMD EPYC processors</b> |                          |            |        |                         |               |                         |              |           |     |            |          |
| 7D2VA025SG  | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02GSG  | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA023SG  | 1x 7272 12C<br>120W 2.6G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA028SG  | 1x 7272 12C<br>120W 2.6G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA021SG  | 1x 7282 16C<br>120W 2.4G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02ASG  | 1x 7282 16C<br>120W 2.4G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA01YSG  | 1x 7352 24C<br>155W 2.3G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |
| 7D2VA02FSG  | 1x 7352 24C<br>155W 2.3G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency

## Models for EMEA countries

Table 7. Models for EMEA countries

| Model   | AMD EPYC processor†       | Memory     | RAID          | Drive bays              | OCP             | Slots                   | Power supply | Front VGA | XCC | Fans       | Rail kit |
|---|---------------------------|------------|---------------|-------------------------|-----------------|-------------------------|--------------|-----------|-----|------------|----------|
| Standard models with a 3-year warranty (machine type 7D2V)        |                           |            |               |                         |                 |                         |              |           |     |            |          |
| <b>Standard models with third-generation AMD EPYC processors</b>  |                           |            |               |                         |                 |                         |              |           |     |            |          |
| 7D2VA043EA  | 1x 7313 16C<br>155W 3.0G  | 1x<br>32GB | 930-8i        | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA044EA  | 1x 7313 16C<br>155W 3.0G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA04GEA  | 1x 7313 16C<br>155W 3.0G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA04MEA  | 1x 7343 16C<br>190W 3.2G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA045EA  | 1x 7453 28C<br>180W 2.8G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA04LEA  | 1x 7453 28C<br>180W 2.8G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>1100W  | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA046EA  | 1x 7513 32C<br>200W 2.6G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA04KEA  | 1x 7513 32C<br>200W 2.6G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>1100W  | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA04JEA  | 1x 7713 64C<br>225W 2.0G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>1100W  | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA04HEA  | 1x 7763 64C<br>280W 2.45G | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>1800W  | Opt       | Ent | 5x<br>Perf | Slide    |
| <b>Standard models with second-generation AMD EPYC processors</b> |                           |            |               |                         |                 |                         |              |           |     |            |          |
| 7D2VA01KEA  | 1x 7262 8C<br>155W 3.2G   | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA01LEA  | 1x 7302 16C<br>155W 3.0G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA039EA  | 1x 7352 24C<br>155W 2.3G  | 2x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | 2x25Gb<br>57414 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA03AEA  | 1x 7352 24C<br>155W 2.3G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA03BEA  | 1x 7402 24C<br>180W 2.8G  | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |
| 7D2VA03CEA  | 1x 7452 32C<br>155W 2.35G | 1x<br>32GB | 940-8i<br>4GB | 8x 2.5" SAS<br>Open bay | Open            | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide    |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency

## Models for Hong Kong, Taiwan, Korea (HTK)

Table 8. Models for Hong Kong, Taiwan, Korea (HTK)

| Model   | AMD EPYC processor†      | Memory     | RAID   | Drive bays              | OCP           | Slots                   | Power supply | Front VGA | XCC | Fans       | Rail kit |
|---|--------------------------|------------|--------|-------------------------|---------------|-------------------------|--------------|-----------|-----|------------|----------|
| Standard models with a 3-year warranty (machine type 7D2V)        |                          |            |        |                         |               |                         |              |           |     |            |          |
| <b>Standard models with second-generation AMD EPYC processors</b> |                          |            |        |                         |               |                         |              |           |     |            |          |
| 7D2VA01UCN  | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02QCN  | 1x 7252 8C<br>120W 3.1G  | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02MCN  | 1x 7272 12C<br>120W 2.6G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02NCN  | 1x 7272 12C<br>120W 2.6G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02CCN  | 1x 7282 16C<br>120W 2.4G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA02LCN  | 1x 7282 16C<br>120W 2.4G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide    |
| 7D2VA01WCN  | 1x 7352 24C<br>155W 2.3G | 1x<br>16GB | 930-8i | 8x 2.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |
| 7D2VA022CN  | 1x 7352 24C<br>155W 2.3G | 1x<br>16GB | 930-8i | 8x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide    |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency

## Models for India

Table 9. Models for India

| Model  | AMD EPYC processor†       | Memory     | RAID          | Drive bays               | OCP           | Slots                   | Power supply | Front VGA | XCC | Fans       | Rail kit     |
|--|---------------------------|------------|---------------|--------------------------|---------------|-------------------------|--------------|-----------|-----|------------|--------------|
| Standard models with a 3-year warranty (machine type 7D2V)         |                           |            |               |                          |               |                         |              |           |     |            |              |
| <b>Standard models with second-generation AMD EPYC processors</b>  |                           |            |               |                          |               |                         |              |           |     |            |              |
| 7D2VA024SG   | 1x 7252 8C<br>120W 3.1G   | 1x<br>16GB | 930-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide        |
| 7D2VA026SG   | 1x 7252 8C<br>120W 3.1G   | 1x<br>16GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide        |
| 7D2VA020SG   | 1x 7272 12C<br>120W 2.6G  | 1x<br>16GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide        |
| 7D2VA02PSG   | 1x 7272 12C<br>120W 2.6G  | 1x<br>16GB | 930-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide        |
| 7D2VA02DSG   | 1x 7282 16C<br>120W 2.4G  | 1x<br>16GB | 930-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide        |
| 7D2VA02JSG   | 1x 7282 16C<br>120W 2.4G  | 1x<br>16GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Std  | Slide        |
| 7D2VA01QSG   | 1x 7352 24C<br>155W 2.3G  | 1x<br>16GB | 930-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide        |
| 7D2VA01SSG   | 1x 7352 24C<br>155W 2.3G  | 1x<br>16GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen4 | 1x<br>750W   | Yes       | Std | 5x<br>Perf | Slide        |
| TopSeller models with a 3-year warranty (machine type 7D2V)        |                           |            |               |                          |               |                         |              |           |     |            |              |
| <b>TopSeller models with second-generation AMD EPYC processors</b> |                           |            |               |                          |               |                         |              |           |     |            |              |
| 7D2VA04ZSG   | 1x 7252 8C<br>120W 3.1G   | 1x<br>16GB | Missing<br>FC | 12x 3.5" SAS<br>Open bay | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA050SG   | 1x 7252 8C<br>120W 3.1G   | 1x<br>16GB | Option        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | Open                    | 1x<br>500W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA04SSG   | 1x 7262 8C<br>155W 3.2G   | 1x<br>16GB | 530-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>500W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA04VSG   | 1x 7262 8C<br>155W 3.2G   | 1x<br>16GB | 530-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>500W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA04USG   | 1x 7272 12C<br>120W 2.6G  | 1x<br>16GB | 530-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>500W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA04WSG   | 1x 7282 16C<br>120W 2.4G  | 1x<br>32GB | 530-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>500W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA04YSG   | 1x 7282 16C<br>120W 2.4G  | 1x<br>32GB | 530-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>500W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA04XSG   | 2x 7452 32C<br>155W 2.35G | 2x<br>32GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 2x<br>750W   | Opt       | Ent | 6x<br>Perf | Slide<br>CMA |
| 7D2VA052SG   | 1x 7452 32C<br>155W 2.35G | 1x<br>32GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA054SG   | 1x 7452 32C<br>155W 2.35G | 2x<br>16GB | 930-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA04TSG   | 2x 7532 32C<br>200W 2.4G  | 2x<br>32GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 2x<br>750W   | Opt       | Ent | 6x<br>Perf | Slide<br>CMA |
| 7D2VA051SG   | 1x 7532 32C<br>200W 2.4G  | 2x<br>16GB | 930-8i        | 8x 2.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |
| 7D2VA053SG   | 1x 7532 32C<br>200W 2.4G  | 2x<br>32GB | 930-8i        | 8x 3.5" SAS<br>Open bay  | 4x1Gb<br>5719 | 3 (x16, x8,<br>x8) Gen3 | 1x<br>750W   | Opt       | Ent | 5x<br>Perf | Slide<br>CMA |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency



## Models for Japan

Table 10. Models for Japan

| Model  | AMD EPYC processor†   | Memory  | RAID       | Drive bays           | OCP        | Slots                | Power supply | Front VGA | XCC | Fans   | Rail kit |
|--|-----------------------|---------|------------|----------------------|------------|----------------------|--------------|-----------|-----|--------|----------|
| Standard models with a 3-year warranty (machine type 7D2V)         |                       |         |            |                      |            |                      |              |           |     |        |          |
| <b>Standard models with second-generation AMD EPYC processors</b>  |                       |         |            |                      |            |                      |              |           |     |        |          |
| 7D2VA01FJP   | 1x 7252 8C 120W 3.1G  | 1x 16GB | 940-8i 4GB | 8x 2.5" SAS Open bay | 2x25Gb CX4 | 3 (x16, x8, x8) Gen4 | 1x 750W      | Opt       | Adv | 5x Std | Slide    |
| TopSeller models with a 3-year warranty (machine type 7D2V)        |                       |         |            |                      |            |                      |              |           |     |        |          |
| <b>TopSeller models with second-generation AMD EPYC processors</b> |                       |         |            |                      |            |                      |              |           |     |        |          |
| 7D2VA015JP   | 1x 7F32 8C 180W 3.7G  | 1x 16GB | 940-8i 4GB | 8x 2.5" SAS Open bay | 4x1Gb 5719 | 3 (x16, x8, x8) Gen4 | 1x 1100W     | Opt       | Adv | 5x Std | Slide    |
| 7D2VA016JP   | 1x 7F52 16C 240W 3.5G | 1x 16GB | 940-8i 4GB | 8x 2.5" SAS Open bay | 4x1Gb 5719 | 3 (x16, x8, x8) Gen4 | 1x 1100W     | Opt       | Adv | 5x Std | Slide    |
| 7D2VA01MJP   | 1x 7F72 24C 240W 3.2G | 1x 16GB | 940-8i 4GB | 8x 2.5" SAS Open bay | 4x1Gb 5719 | 3 (x16, x8, x8) Gen4 | 1x 1100W     | Opt       | Adv | 5x Std | Slide    |
| 7D2VA01NJP   | 1x 7H12 64C 280W 2.6G | 1x 16GB | 940-8i 4GB | 8x 2.5" SAS Open bay | 4x1Gb 5719 | 3 (x16, x8, x8) Gen4 | 1x 1100W     | Opt       | Adv | 5x Std | Slide    |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency

## Models for Latin American countries (except Brazil)

Table 11. Models with a 3-year warranty for Latin American countries (except Brazil)

| Model   | AMD EPYC processor†   | Memory  | RAID        | Drive bays           | OCP        | Slots                | Power supply | Front VGA | XCC | Fans    | Rail kit |
|---|-----------------------|---------|-------------|----------------------|------------|----------------------|--------------|-----------|-----|---------|----------|
| Standard models with a 3-year warranty (machine type 7D2V)        |                       |         |             |                      |            |                      |              |           |     |         |          |
| <b>Standard models with second-generation AMD EPYC processors</b> |                       |         |             |                      |            |                      |              |           |     |         |          |
| 7D2V1000LA  | 1x 7282 16C 120W 2.4G | 1x 16GB | 930-16i 4GB | 8x 2.5" SAS Open bay | 4x1Gb 5719 | 3 (x16, x8, x8) Gen4 | 1x 1100W     | Yes       | Std | 5x Perf | Option   |
| 7D2V1001LA  | 1x 7532 32C 200W 2.4G | 1x 32GB | 930-16i 4GB | 8x 2.5" SAS Open bay | 4x1Gb 5719 | 3 (x16, x8, x8) Gen4 | 1x 1100W     | Yes       | Std | 5x Perf | Option   |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency

## Models for USA and Canada

Table 12. Models for USA and Canada

| Model   | AMD EPYC processor†   | Memory  | RAID   | Drive bays           | OCP  | Slots | Power supply | Front VGA | XCC | Fans    | Rail kit |
|---|-----------------------|---------|--------|----------------------|------|-------|--------------|-----------|-----|---------|----------|
| Standard models with a 3-year warranty (machine type 7D2V)        |                       |         |        |                      |      |       |              |           |     |         |          |
| <b>Standard models with second-generation AMD EPYC processors</b> |                       |         |        |                      |      |       |              |           |     |         |          |
| 7D2VA04FNA  | 1x 7282 16C 120W 2.4G | 1x 32GB | Option | Option 2.5" Open bay | Open | Open  | 1x 750W      | Yes       | Ent | 5x Perf | Slide    |

† Processor description: AMD EPYC model, number of cores, thermal design power (TDP), core frequency

## Processor options

The SR665 supports processors in the AMD EPYC family of processors. The server supports one or two processors.

Topics in this section:

- [Processor options](#)
- [One-processor configurations](#)

There are no restrictions in the configuration of the servers based on the TDP thermal value of the processor. The appropriate heatsink will be automatically selected based on the processor and configuration of the server.

Certain ambient temperature requirements may apply. See the [Operating environment](#) section for details.

In the SR665, processors either have a standard 1U heatsink, standard 2U heatsink, or a performance heatsink attached depending on the TDP of the processor and configuration of the server. Performance heatsinks include a large 2U-high copper radiator that connects to the main heatsink via heat pipes.

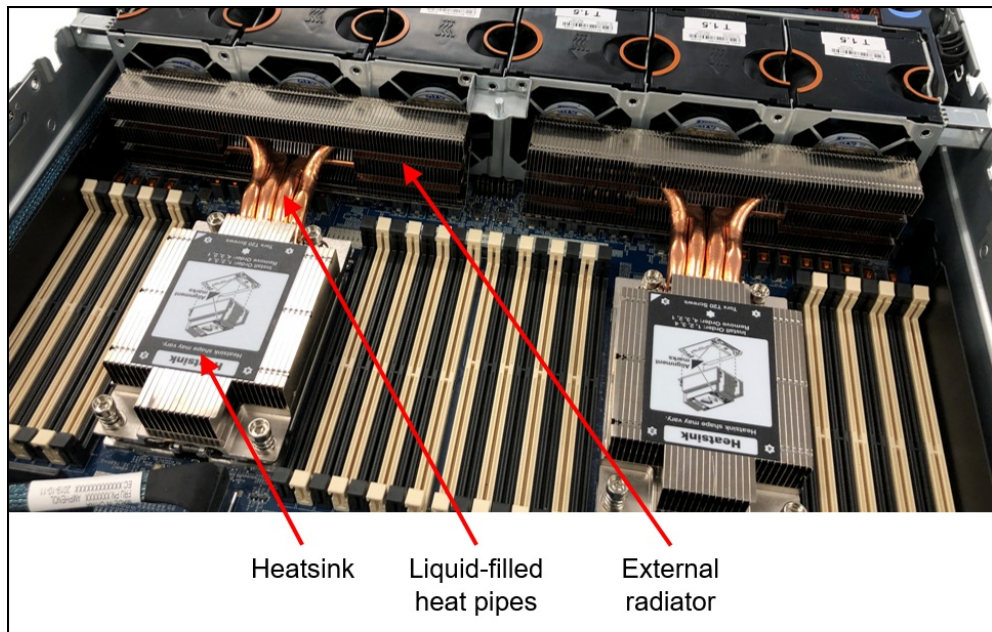


Figure 6. Performance heatsink

## Processor options

The table below lists the AMD processors that are currently supported.

All supported processors have the following characteristics:

- Third and second-generation AMD EPYC processors (formerly codenamed "Milan" and "Rome" respectively)
- 7 nm process technology
- Eight DDR4 memory channels
- 128 PCIe 4.0 I/O lanes, 64 lanes available for PCIe and NVMe devices

Table 13. SR665 processor support

| Part number                           | Feature code | Description  | Quantity supported* |
|---------------------------------------|--------------|--|---------------------|
| Third-generation AMD EPYC processors  |              |  |                     |
| 4XG7A63618                            | BF7H         | ThinkSystem SR665 AMD EPYC 72F3 8C 180W 3.7GHz Processor w/o Fan   | 2                   |
| 4XG7A63607                            | BF76         | ThinkSystem SR665 AMD EPYC 7313 16C 155W 3.0GHz Processor w/o Fan  | 2                   |
| CTO only*                             | BF7B         | ThinkSystem AMD EPYC 7313P 16C 155W 3.0GHz Processor               | 1                   |
| 4XG7A63615                            | BF7E         | ThinkSystem SR665 AMD EPYC 7343 16C 190W 3.2GHz Processor w/o Fan  | 2                   |
| 4XG7A63614                            | BF7D         | ThinkSystem SR665 AMD EPYC 73F3 16C 240W 3.5GHz Processor w/o Fan  | 2                   |
| 4XG7A63609                            | BF78         | ThinkSystem SR665 AMD EPYC 7413 24C 180W 2.65GHz Processor w/o Fan | 2                   |
| 4XG7A63603                            | BF72         | ThinkSystem SR665 AMD EPYC 7443 24C 200W 2.85GHz Processor w/o Fan | 2                   |
| CTO only*                             | BF79**       | ThinkSystem AMD EPYC 7443P 24C 200W 2.85GHz Processor              | 1                   |
| 4XG7A63605                            | BF74         | ThinkSystem SR665 AMD EPYC 7453 28C 180W 2.8GHz Processor w/o Fan  | 2                   |
| 4XG7A63617                            | BF7G         | ThinkSystem SR665 AMD EPYC 74F3 24C 240W 3.2GHz Processor w/o Fan  | 2                   |
| 4XG7A63611                            | BF7A         | ThinkSystem SR665 AMD EPYC 7513 32C 200W 2.6GHz Processor w/o Fan  | 2                   |
| 4XG7A63608                            | BF77         | ThinkSystem SR665 AMD EPYC 7543 32C 225W 2.8GHz Processor w/o Fan  | 2                   |
| CTO only*                             | BF71         | ThinkSystem AMD EPYC 7543P 32C 225W 2.8GHz Processor               | 1                   |
| 4XG7A63616                            | BF7F         | ThinkSystem SR665 AMD EPYC 75F3 32C 280W 2.95GHz Processor w/o Fan | 2                   |
| 4XG7A63620                            | BGQ5         | ThinkSystem SR665 AMD EPYC 7643 48C 225W 2.3GHz Processor w/o Fan  | 2                   |
| 4XG7A63606                            | BF75         | ThinkSystem SR665 AMD EPYC 7663 56C 225W 2.0GHz Processor w/o Fan  | 2                   |
| 4XG7A63613                            | BF7C         | ThinkSystem SR665 AMD EPYC 7713 64C 225W 2.0GHz Processor w/o Fan  | 2                   |
| CTO only*                             | BF70         | ThinkSystem AMD EPYC 7713P 64C 225W 2.0GHz Processor               | 1                   |
| 4XG7A63604                            | BF73         | ThinkSystem SR665 AMD EPYC 7763 64C 280W 2.45GHz Processor w/o Fan | 2                   |
| Second-generation AMD EPYC processors |              |  |                     |
| CTO only*                             | B766         | ThinkSystem AMD EPYC 7232P 8C 120W 3.1GHz Processor                | 1                   |
| 4XG7A63366                            | B6VU         | ThinkSystem SR665 AMD EPYC 7252 8C 120W 3.1GHz Processor w/o Fan   | 2                   |
| 4XG7A63373                            | B6TS         | ThinkSystem SR665 AMD EPYC 7262 8C 155W 3.2GHz Processor w/o Fan   | 2                   |
| 4XG7A63381                            | BCE9         | ThinkSystem SR665 AMD EPYC 7F32 8C 180W 3.7GHz Processor w/o Fan   | 2                   |
| 4XG7A63377                            | B767         | ThinkSystem SR665 AMD EPYC 7272 12C 120W 2.9GHz Processor w/o Fan  | 2                   |
| 4XG7A63379                            | B6VZ         | ThinkSystem SR665 AMD EPYC 7282 16C 120W 2.8GHz Processor w/o Fan  | 2                   |
| CTO only*                             | B6VV         | ThinkSystem AMD EPYC 7302P 16C 155W 3.0GHz Processor               | 1                   |
| 4XG7A38058                            | B6TV         | ThinkSystem SR665 AMD EPYC 7302 16C 155W 3.0GHz Processor w/o Fan  | 2                   |
| 4XG7A63380                            | BCE8         | ThinkSystem SR665 AMD EPYC 7F52 16C 240W 3.5GHz Processor w/o Fan  | 2                   |
| 4XG7A63374                            | B6W0         | ThinkSystem SR665 AMD EPYC 7352 24C 155W 2.3GHz Processor w/o Fan  | 2                   |
| CTO only*                             | B6TT         | ThinkSystem AMD EPYC 7402P 24C 180W 2.8GHz Processor               | 1                   |
| 4XG7A63372                            | B6VW         | ThinkSystem SR665 AMD EPYC 7402 24C 180W 2.8GHz Processor w/o Fan  | 2                   |
| 4XG7A63382                            | BCEA         | ThinkSystem SR665 AMD EPYC 7F72 24C 240W 3.2GHz Processor w/o Fan  | 2                   |
| 4XG7A63378                            | B6TU         | ThinkSystem SR665 AMD EPYC 7452 32C 155W 2.35GHz Processor w/o Fan | 2                   |
| CTO only*                             | B6VX         | ThinkSystem AMD EPYC 7502P 32C 180W 2.5GHz Processor               | 1                   |
| 4XG7A38048                            | B5XG         | ThinkSystem SR665 AMD EPYC 7502 32C 180W 2.5GHz Processor w/o Fan  | 2                   |
| 4XG7A63375                            | BABP         | ThinkSystem SR665 AMD EPYC 7532 32C 200W 2.4GHz Processor w/o Fan  | 2                   |
| 4XG7A63370                            | B6W2         | ThinkSystem SR665 AMD EPYC 7542 32C 225W 2.9GHz Processor w/o Fan  | 2                   |
| 4XG7A63368                            | B6W1         | ThinkSystem SR665 AMD EPYC 7552 48C 200W 2.2GHz Processor w/o Fan  | 2                   |
| 4XG7A63376                            | B6W3         | ThinkSystem SR665 AMD EPYC 7642 48C 225W 2.3GHz Processor w/o Fan  | 2                   |
| 4XG7A63371                            | BABN         | ThinkSystem SR665 AMD EPYC 7662 64C 225W 2.0GHz Processor w/o Fan  | 2                   |
| CTO only*                             | B6VY         | ThinkSystem AMD EPYC 7702P 64C 200W 2.0GHz Processor               | 1                   |

| Part number | Feature code | Description  | Quantity supported* |
|-------------|--------------|--|---------------------|
| 4XG7A63369  | B6TR         | ThinkSystem SR665 AMD EPYC 7702 64C 200W 2.0GHz Processor w/o Fan  | 2                   |
| 4XG7A38059  | B5XF         | ThinkSystem SR665 AMD EPYC 7742 64C 225W 2.25GHz Processor w/o Fan | 2                   |
| 4XG7A63367  | BAVP         | ThinkSystem SR665 AMD EPYC 7H12 64C 280W 2.6GHz Processor w/o Fan  | 2                   |

\* Processors with a P suffix are single-socket capable processors and are only available in configure-to-order builds or in preconfigured models

\*\* AMD EPYC 7443P has delayed availability. Please contact your Lenovo sales representative for more information.

The following table lists the features of the supported processors.

Table 14. Processor specifications

| EPYC model**                          | Cores / Threads | Base Frequency | Max Boost Frequency† | L3 Cache | Memory channels | Memory bus | TDP   |
|---------------------------------------|-----------------|----------------|----------------------|----------|-----------------|------------|-------|
| Third-generation AMD EPYC processors  |                 |                |                      |          |                 |            |       |
| 72F3                                  | 8 / 16          | 3.7 GHz        | 4.1 GHz              | 256 MB   | 8               | 3200 MHz   | 180 W |
| 7313 / 7313P                          | 16 / 32         | 3.0 GHz        | 3.7 GHz              | 128 MB   | 8               | 3200 MHz   | 155 W |
| 7343                                  | 16 / 32         | 3.2 GHz        | 3.9 GHz              | 128 MB   | 8               | 3200 MHz   | 190 W |
| 73F3                                  | 16 / 32         | 3.5 GHz        | 4.0 GHz              | 256 MB   | 8               | 3200 MHz   | 240 W |
| 7413                                  | 24 / 48         | 2.65 GHz       | 3.6 GHz              | 128 MB   | 8               | 3200 MHz   | 180 W |
| 7443 / 7443P                          | 24 / 48         | 2.85 GHz       | 4.0 GHz              | 128 MB   | 8               | 3200 MHz   | 200 W |
| 7453                                  | 28 / 56         | 2.75 GHz       | 3.45 GHz             | 64 MB    | 8               | 3200 MHz   | 225 W |
| 74F3                                  | 24 / 48         | 3.2 GHz        | 4.0 GHz              | 256 MB   | 8               | 3200 MHz   | 240 W |
| 7513                                  | 32 / 64         | 2.6 GHz        | 3.65 GHz             | 128 MB   | 8               | 3200 MHz   | 200 W |
| 7543 / 7543P                          | 32 / 64         | 2.8 GHz        | 3.7 GHz              | 256 MB   | 8               | 3200 MHz   | 225 W |
| 75F3                                  | 32 / 64         | 2.95 GHz       | 4.0 GHz              | 256 MB   | 8               | 3200 MHz   | 280 W |
| 7643                                  | 48 / 96         | 2.3 GHz        | 3.6 GHz              | 256 MB   | 8               | 3200 MHz   | 225 W |
| 7663                                  | 56 / 112        | 2.0 GHz        | 3.5 GHz              | 256 MB   | 8               | 3200 MHz   | 225 W |
| 7713 / 7713P                          | 64 / 128        | 2.0 GHz        | 3.675 GHz            | 256 MB   | 8               | 3200 MHz   | 225 W |
| 7763                                  | 64 / 128        | 2.45 GHz       | 3.5 GHz              | 256 MB   | 8               | 3200 MHz   | 280 W |
| Second-generation AMD EPYC processors |                 |                |                      |          |                 |            |       |
| 7232P                                 | 8 / 16          | 3.1 GHz        | 3.2 GHz              | 32 MB    | 8               | 3200 MHz*  | 120 W |
| 7252                                  | 8 / 16          | 3.1 GHz        | 3.2 GHz              | 64 MB    | 8               | 3200 MHz*  | 120 W |
| 7262                                  | 8 / 16          | 3.2 GHz        | 3.4 GHz              | 128 MB   | 8               | 3200 MHz   | 155W  |
| 7F32                                  | 8 / 16          | 3.7 GHz        | 3.9 GHz              | 128 MB   | 8               | 3200 MHz   | 180W  |
| 7272                                  | 12 / 24         | 2.9 GHz        | 3.2 GHz              | 64 MB    | 8               | 3200 MHz*  | 120 W |
| 7282                                  | 16 / 32         | 2.8 GHz        | 3.2 GHz              | 64 MB    | 8               | 3200 MHz*  | 120 W |
| 7302 / 7302P                          | 16 / 32         | 3.0 GHz        | 3.3 GHz              | 128 MB   | 8               | 3200 MHz   | 155 W |
| 7F52                                  | 16 / 32         | 3.5 GHz        | 3.9 GHz              | 256 MB   | 8               | 3200 MHz   | 240W  |
| 7352                                  | 24 / 48         | 2.3 GHz        | 3.2 GHz              | 128 MB   | 8               | 3200 MHz   | 155 W |
| 7402 / 7402P                          | 24 / 48         | 2.8 GHz        | 3.35 GHz             | 128 MB   | 8               | 3200 MHz   | 180 W |
| 7F72                                  | 24 / 48         | 3.2 GHz        | 3.7 GHz              | 192 MB   | 8               | 3200 MHz   | 240W  |
| 7452                                  | 32 / 64         | 2.35 GHz       | 3.35 GHz             | 128 MB   | 8               | 3200 MHz   | 155 W |
| 7502 / 7502P                          | 32 / 64         | 2.5 GHz        | 3.35 GHz             | 128 MB   | 8               | 3200 MHz   | 180 W |

| EPYC model** | Cores / Threads | Base Frequency | Max Boost Frequency† | L3 Cache | Memory channels | Memory bus | TDP   |
|--------------|-----------------|----------------|----------------------|----------|-----------------|------------|-------|
| 7532         | 32 / 64         | 2.4 GHz        | 3.3 GHz              | 256 MB   | 8               | 3200 MHz   | 200W  |
| 7542         | 32 / 64         | 2.9 GHz        | 3.4 GHz              | 128 MB   | 8               | 3200 MHz   | 225 W |
| 7552         | 48 / 96         | 2.2 GHz        | 3.3 GHz              | 192 MB   | 8               | 3200 MHz   | 200 W |
| 7642         | 48 / 96         | 2.3 GHz        | 3.3 GHz              | 256 MB   | 8               | 3200 MHz   | 225 W |
| 7662         | 64 / 128        | 2.0 GHz        | 3.3 GHz              | 256 MB   | 8               | 3200 MHz   | 225W  |
| 7702 / 7702P | 64 / 128        | 2.0 GHz        | 3.35 GHz             | 256 MB   | 8               | 3200 MHz   | 200 W |
| 7742         | 64 / 128        | 2.25 GHz       | 3.4 GHz              | 256 MB   | 8               | 3200 MHz   | 225 W |
| 7H12         | 64 / 128        | 2.6 GHz        | 3.3 GHz              | 256 MB   | 8               | 3200 MHz   | 280W  |

† The maximum single-core frequency at with the processor is capable of operating

\* This processor supports 8 memory channels at 3200 MHz, however performance is optimized for 4 channels at 2666 MHz

\*\* Processors with a P suffix are single-socket capable processors

## One-processor configurations

The SR665 can be used with only one processor installed. Most core functions of the server (including the XClarity Controller) are connected to processor 1 as shown in the [System architecture](#) section.

With only one processor, the server has the following capabilities:

- 16 memory DIMMs for a 2TB maximum
- Slot 1-3 are available; Slot 4-8 are not available
- 8x onboard SATA ports
- 4x onboard NVMe ports

Drive support and controller support is as listed in the [Controller selections](#) section - see the rows for 1 processor installed in the tables. Drives in the mid-chassis drive bays (2.5-inch or 3.5-inch) are not supported in 1-processor configurations because power for the mid-chassis drive backplanes come from Riser 2 and the use of Riser 2 requires the second processor.

## Memory options

The server uses Lenovo TruDDR4 memory operating at up to 3200 MHz. The processors have 8 memory channels and support 2 DIMMs per channel, for a total of 16 DIMMs. The server supports up to 8TB of memory using 32x 256GB 3DS RDIMMs and two processors.

The server supports memory speeds up to 3200 MHz, based on the memory type and the number of DIMMs installed per channel, as listed in the following table.

Table 15. Memory speeds supported

| Memory type         | 1 DIMM per channel | 2 DIMMs per channel |
|---------------------|--------------------|---------------------|
| RDIMMs              | 3200 MHz           | 2933 MHz            |
| 3DS RDIMMs          | 2933 MHz           | 2666 MHz            |
| Performance+ RDIMMs | 3200 MHz           | 3200 MHz            |

The following table lists the memory options that are available for the server.

Lenovo TruDDR4 memory uses the highest quality components that are sourced from Tier 1 DRAM suppliers and only memory that meets the strict requirements of Lenovo is selected. It is compatibility tested and tuned to maximize performance and reliability. From a service and support standpoint, Lenovo TruDDR4 memory automatically assumes the system warranty, and Lenovo provides service and support worldwide.

Table 16. Memory options

| Part number                                       | Feature code | Description  |
|---|--------------|--|
| RDIMMs (3200 MHz at 1 DPC, 2933 MHz at 2 DPC)     |              |  |
| 4ZC7A15121  | B5XD         | ThinkSystem 16GB TruDDR4 3200MHz (2Rx8 1.2V) RDIMM-A               |
| 4ZC7A15122  | B5XE         | ThinkSystem 32GB TruDDR4 3200MHz (2Rx4 1.2V) RDIMM-A               |
| 4ZC7A15123  | B8NU         | ThinkSystem 32GB TruDDR4 3200MHz (2Rx8 1.2V) RDIMM-A               |
| 4ZC7A15124  | B5XC         | ThinkSystem 64GB TruDDR4 3200MHz (2Rx4 1.2V) RDIMM-A               |
| 3DS RDIMMs (2933 MHz at 1 DPC, 2666 MHz at 2 DPC) |              |  |
| 4ZC7A15125  | B8NT         | ThinkSystem 128GB TruDDR4 3200 MHz (4Rx4, 12.V) 3DS RDIMM-A        |
| 4ZC7A08727  | B4Y3         | ThinkSystem 256GB TruDDR4 2933MHz (8Rx4 1.2V) 3DS RDIMM            |
| Performance+ RDIMMs (3200 MHz at 1 DPC and 2 DPC) |              |  |
| 4X77A12188  | BCZY         | ThinkSystem 32GB TruDDR4 Performance+ 3200 MHz (2Rx8 1.2V) RDIMM-A |
| 4X77A12189  | BCZZ         | ThinkSystem 64GB TruDDR4 Performance+ 3200 MHz (2Rx4 1.2V) RDIMM-A |

The following rules apply when selecting the memory configuration:

- The server supports RDIMMs and 3DS-RDIMMs.
- Mixing of RDIMMs and 3DS-RDIMMs is not supported.
- Mixing of Performance+ and non-Performance+ DIMMs is not supported
- Mixing x4 and x8 DIMMs is supported, but not in the same channel
- Mixing of DIMM rank counts is supported. Follow the required installation order installing the DIMMs with the higher rank counts first.
- Mixing of DIMM capacities is supported, however only two different capacities are supported across all channels of the processor (eg 32GB and 64GB). Follow the required installation order installing the larger DIMMs first.
- Memory mirroring and memory rank sparing are not supported.

For best performance, consider the following:

- Ensure the memory installed is at least the same speed as the memory bus of the selected processor.
- Populate memory DIMMs in quantities of 8 or 16, so that all memory channels are used.
- Populate memory channels so they all have the same total memory capacity.
- For more details on how to best configure the memory subsystem for performance, refer to the Lenovo Press paper “Balanced Memory Configurations with 2nd Gen and 3rd Gen AMD EPYC Processors” available from <https://lenovopress.com/lp1268-balanced-memory-configurations-with-amd-epyc-processors>

The following memory protection technologies are supported:

- ECC detection/correction
- SDDC (for x4-based memory DIMMs; look for "x4" in the DIMM description)
- Patrol/Demand Scrubbing
- DRAM Address Command Parity with Replay
- DRAM Uncorrected ECC Error Retry
- Post Package Repair

## Internal storage

The SR665 has three drive bay zones and supports up to 20x 3.5-inch or 40x 2.5-inch hot-swap drive bays or a combination of drive bays, depending on the selected chassis and backplane configuration. The server also supports configurations without any drive bays if desired.

The three drive bay zones are as follows:

- Front:
  - Up to 12x 3.5-inch hot-swap bays, or
  - Up to 24x 2.5-inch hot-swap bays
- Middle:
  - 4x 3.5-inch hot-swap bays, or
  - 8x 2.5-inch hot-swap bays
- Rear:
  - Up to 4x 3.5-inch hot-swap bays, or
  - Up to 8x 2.5-inch hot-swap bays
  - Also supports 2x 7mm hot-swap drives bays

All drives are hot-swap and are accessible from the front, from the rear, or from drive bays that are located in the middle of the server (accessible when you remove the top cover of the server).

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

In this section:

- [NVMe drive support](#)
- [Front drive bays](#)
- [Mid drive bays](#)
- [Rear drive bays](#)
- [Supported drive bay combinations](#)
- [Controller selections](#)
- [Field upgrades](#)
- [RAID flash power module \(supercap\) support](#)
- [M.2 drives](#)
- [7mm drives](#)
- [SED encryption key management](#)

## NVMe drive support

The SR665 supports NVMe drives to maximize storage performance.

- Up to 16 NVMe drives without oversubscription (that is, each x4 drive has a dedicated x4 (4 lanes) connection to the processor)
  - All installed in front bays
- Up to 32 NVMe drives with oversubscription (that is, eight x4 drives share a x16 connection via an NVMe switch, and the switch manages the connections to maximize performance of all drives)
  - 24 NVMe drives in the front bays
  - 8 NVMe drives in the mid bays

- Up to 12 NVMe drives in a 3.5-inch drive configuration
  - All installed in front bays

**Riser 3 support:** The use of the onboard NVMe ports is mutually exclusive with Riser 3, as these use the same PCIe connectors. See the [System architecture](#) section.

The specifics of these configurations are covered in the [Supported drive bay combinations](#) and [Controller selections](#) sections.

The tables in those sections indicate the number of NVMe drives in each configuration plus the subscription ratio. The subscription ratio is the number of PCIe lanes from the processor compared to the number of lanes to the drives. A ratio of 1:1 means all drives get the full number of lanes they need to maximize drive performance (currently 4 lanes per drive). A ratio of 1:2 means each drive only gets the half the bandwidth from the processor.

In addition, the SR665 supports two 7mm NVMe drives for use as boot drives. These two drives are connected via separate RAID controller connected to a single PCIe 3.0 x2 host interface. See the [7mm drives](#) section for details.

The RAID 940-8i and RAID 940-16i adapters also support NVMe through a feature named Tri-Mode support (or Trimode support). This feature enables the use of NVMe U.3 drives at the same time as SAS and SATA drives. Cabling of the controller to the backplanes is the same as with SAS/SATA drives, and the NVMe drives are connected via a PCIe x1 link to the controller.

NVMe drives connected using Tri-Mode support provide better performance than SAS or SATA drives: A SATA SSD has a data rate of 6Gbps, a SAS SSD has a data rate of 12Gbps, whereas an NVMe U.3 Gen 4 SSD with a PCIe x1 link will have a data rate of 16Gbps. NVMe drives typically also have lower latency and higher IOPS compared to SAS and SATA drives. Tri-Mode is supported with U.3 NVMe drives in either 2.5-inch and 3.5-inch form factor and requires an AnyBay backplane.

**Tri-Mode requires U.3 drives:** Only NVMe drives with a U.3 interface are supported. U.2 drives are not supported. See the [Internal drive options](#) section for the U.3 drives supported by the server.



## Front drive bays

The front drive bay zone supports the following configurations:

- 3.5-inch drive bays (all hot-swap)
  - No backplane and no drives (supports [field upgrades](#))
  - 8x 3.5-inch SAS/SATA
  - 12x 3.5-inch SAS/SATA
  - 12x 3.5-inch AnyBay
- 2.5-inch drive bays (all hot-swap)
  - No backplane and no drives (supports [field upgrades](#))
  - 8x SAS/SATA
  - 16x SAS/SATA
  - 24x SAS/SATA
  - 8x NVMe
  - 16x NVMe
  - 24x NVMe
  - 8x SAS/SATA + 8x NVMe
  - 16x SAS/SATA + 8x NVMe
  - 8x SAS/SATA + 16x NVMe
  - 8x AnyBay
  - 8x AnyBay + 8x NVMe
  - 8x SAS/SATA + 8x AnyBay
  - 16x SAS/SATA + 8x AnyBay

These configurations are shown in the following figure. The feature codes listed are the backplane feature codes when ordering CTO and correspond to the feature codes listed in the table below the figure.

**Tip:** Configurations with 8x or 16x total drive bays can be configured with or without an Integrated Diagnostics Panel with pull-out LCD display. With the Integrated Diagnostics Display, 8-bay configurations can be upgrade to 16 bays, however 16-bay configurations cannot be upgrade to 24 bays. See the [Local management](#) section for details.

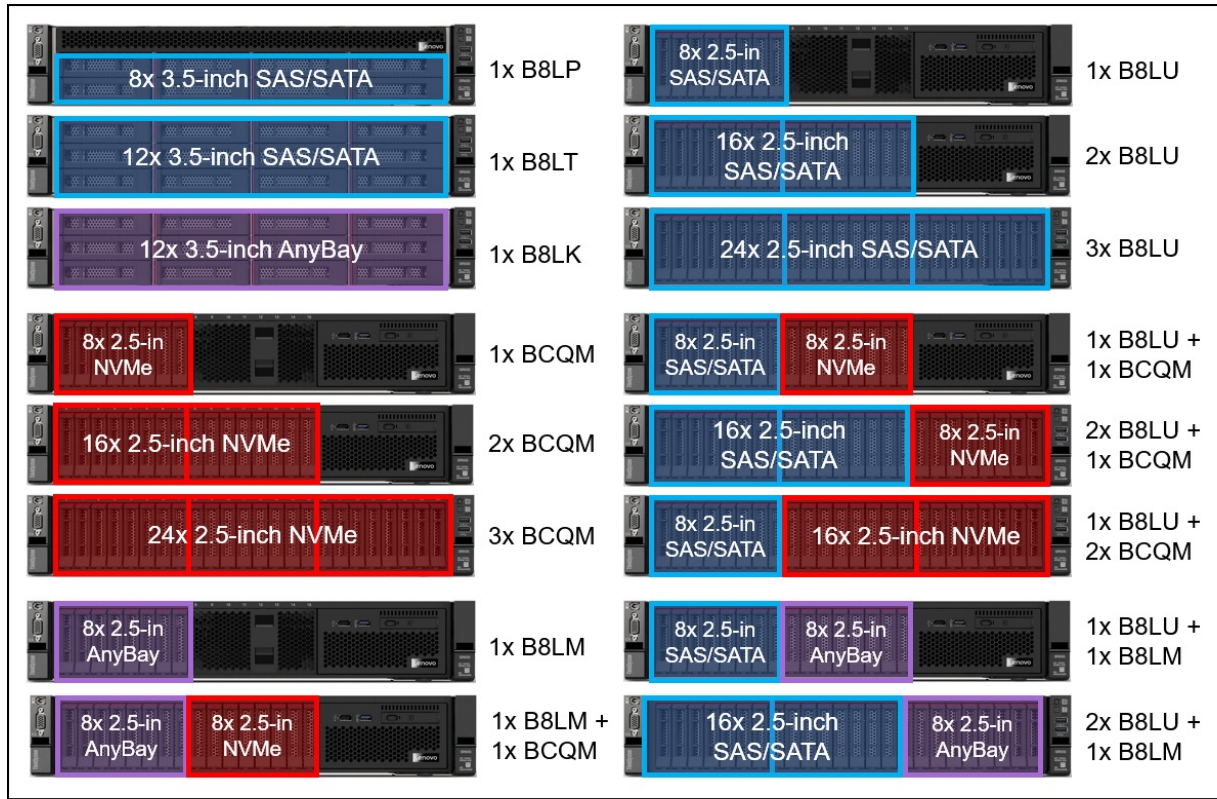


Figure 7. SR665 front drive bay configurations

The backplanes used to provide these drive bays are listed in the following table.

**Field upgrades:** All front backplanes are available as part numbers for field upgrades along with require cable option kits, as described in the [Field upgrades](#) section below.

Table 17. Backplanes for front drive bays

| Feature code  | Description                                    | Maximum supported |
|---|--|-------------------|
| Front 3.5-inch drive backplanes   |  |                   |
| B8LP  | ThinkSystem 2U 8x3.5" SAS/SATA Backplane       | 1                 |
| B8LT  | ThinkSystem 2U 12x3.5" SAS/SATA Backplane      | 1                 |
| B8LK  | ThinkSystem 2U 12x3.5" AnyBay Backplane        | 1                 |
| Front 2.5-inch drive backplanes   |  |                   |
| B8LU  | ThinkSystem 2U 8x2.5" SAS/SATA Backplane       | 3                 |
| B8LM  | ThinkSystem 2U/4U 8x2.5" AnyBay Backplane      | 1                 |
| BCQM  | ThinkSystem 2U/4U 8x2.5" NVMe Backplane        | 3                 |
| Integrated Diagnostics Panel (for 2.5-inch configurations with 8 or 16 bays only) |  |                   |
| BMJA  | ThinkSystem 2U 16x2.5" Front Operator Panel v2 | 1                 |
| B8MS  | ThinkSystem 2U 16x2.5" Front Operator Panel    | 1                 |

**Common backplanes:** Two of the 2.5-inch backplanes listed in the above table use the same physical circuit board. Feature codes B8LM and BCQM use a backplane with eight bays where each bay has both a SAS/SATA connection and an NVMe connection. The difference is which connectors on the backplane are cabled: NVMe and SAS/SATA or just NVMe. Both feature codes use backplane SBB7A06906.

The use of front drive bays has the following configuration rules:

- If 3.5-inch front drive bays are used, an internal RAID adapter or HBA is not supported as the adapter and bays occupy the same physical space
- Any 8x 2.5-inch and 16x 2.5-inch drive configuration (SAS/SATA, AnyBay, NVMe) can optionally be configured for use with the Integrated Diagnostics Panel. 3.5-inch drive configurations do not support the Integrated Diagnostics Panel.

### Mid drive bays

The SR665 supports hot-swap drives installed in the middle of the server chassis. The drive bays are accessible by removing the top lid of the server and levering the mid drive chassis up at the front.

The following configurations are supported:

- 4x 3.5-inch hot-swap SAS/SATA drive bays
- 8x 2.5-inch hot-swap SAS/SATA drive bays
- 8x 2.5-inch hot-swap NVMe drive bays

The drive bays in the open position are shown in the following figure.

**M.2 support:** When mid drive bays are configured, the M.2 adapter is installed on the mid drive bay mechanical as shown in the images.

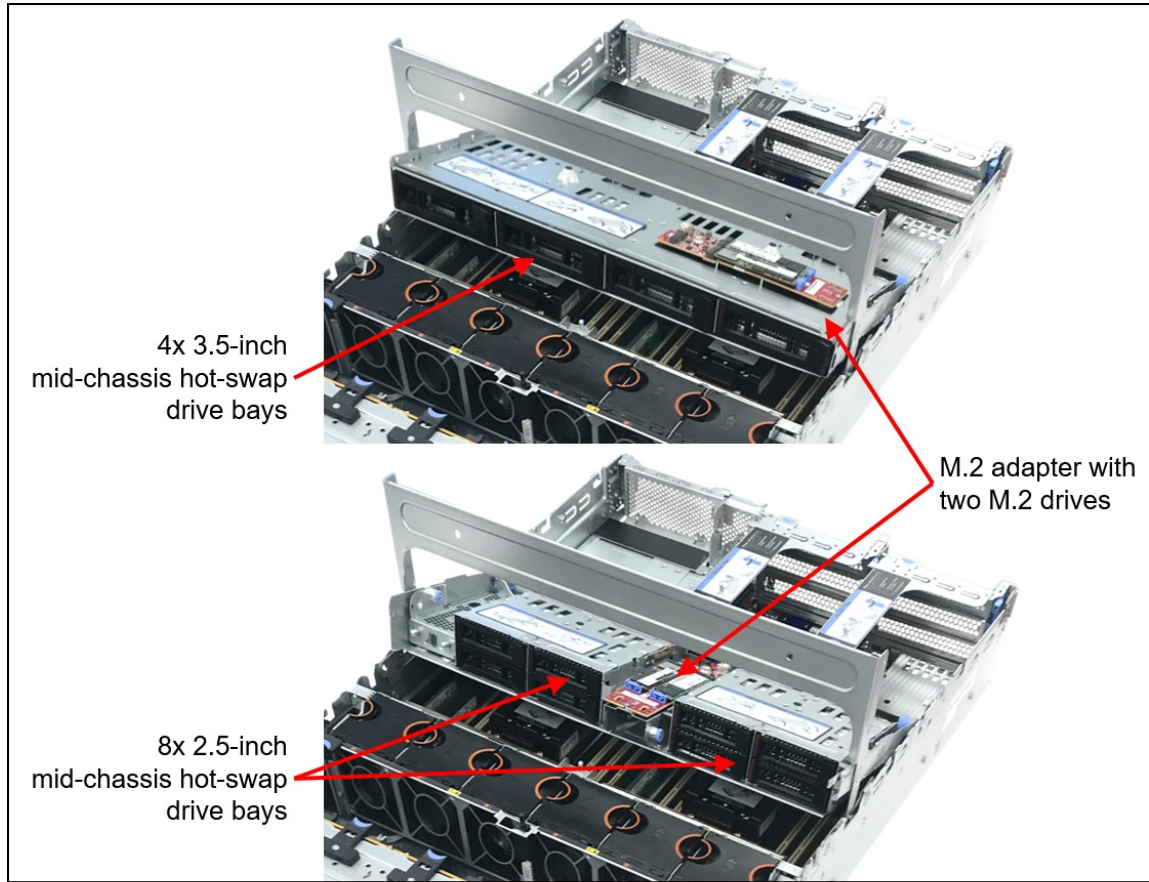


Figure 8. Mid-chassis drive bays

The backplanes used to provide these drive bays are listed in the following table.

Table 18. Backplanes for mid drive bays

| Feature code                   | Description                                     | Maximum supported |
|--------------------------------|---|-------------------|
| Mid - 3.5-inch drive backplane |   |                   |
| BCQK                           | ThinkSystem 2U 4x3.5" SAS/SATA Middle Backplane | 1                 |
| Mid - 2.5-inch drive backplane |   |                   |
| BCQL                           | ThinkSystem 2U 4x2.5" SAS/SATA Middle Backplane | 2‡                |
| B5VN                           | ThinkSystem 2.5" NVMe 4-Bay Middle Backplane    | 2‡                |

‡ 2.5-inch drive backplanes for the mid-chassis area must be installed in pairs. NVMe and SAS/SATA cannot be mixed.

**Field upgrades:** Backplanes are available as part numbers for field upgrades along with require cable option kits, as described in the [Field upgrades](#) section below.

The use of drive bays in the mid-chassis area has the following configuration rules:

- All processors are supported. Higher TDP processors will require the performance heatsinks.
- Full-length adapter cards are not supported
- GPUs (including low profile GPUs such as the T4) are not supported

- The use of mid drive bays requires both Riser 1 and Riser 2 be installed, since power for the mid bay backplanes comes from Riser 2 (and Riser 2 requires Riser 1 be configured)

## Rear drive bays

The SR665 supports hot-swap drives installed at the rear of the server chassis. Supported configurations are as follows:

- 3.5-inch hot-swap drives
  - 2x SAS/SATA drive bays
  - 4x SAS/SATA drive bays
- 2.5-inch hot-swap drives
  - 4x SAS/SATA drive bays
  - 8x SAS/SATA drive bays

The configurations are shown in the following figure.

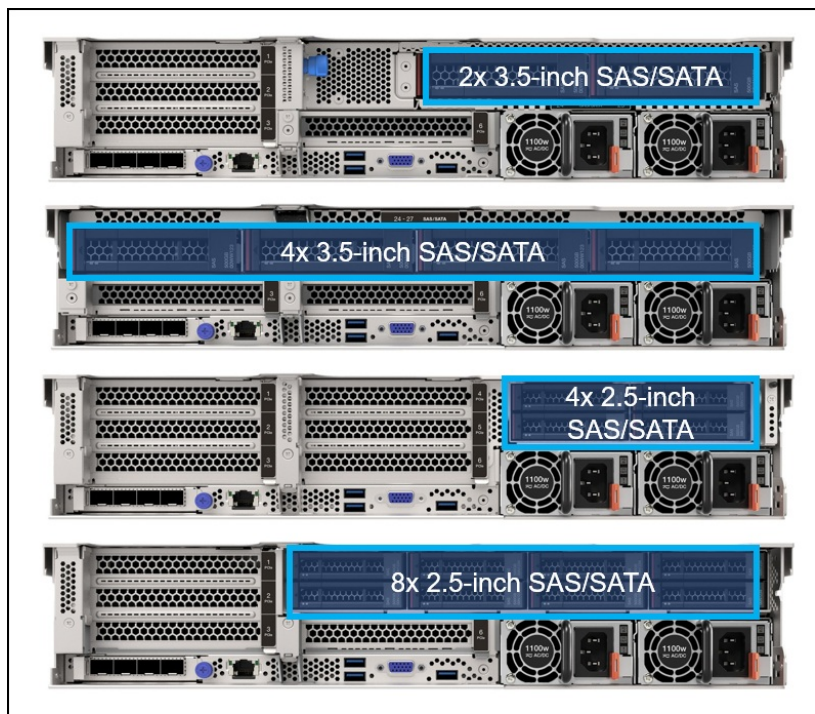


Figure 9. Rear 2.5-inch and 3.5-inch drive bay configurations

In addition, the server supports two 7mm-thickness SSDs which are installed in place of either slot 3 or slot 6 (not both). Supported 7mm drive bays are:

- 2x 7mm SAS/SATA hot-swap drive bays
- 2x 7mm NVMe hot-swap drive bays

These drives are shown in the following figure. See the [7mm drives](#) section for more information.

**Tips:** These 7mm drives can be used in conjunction with any rear drive 2.5-inch or 3.5-inch bay combination.

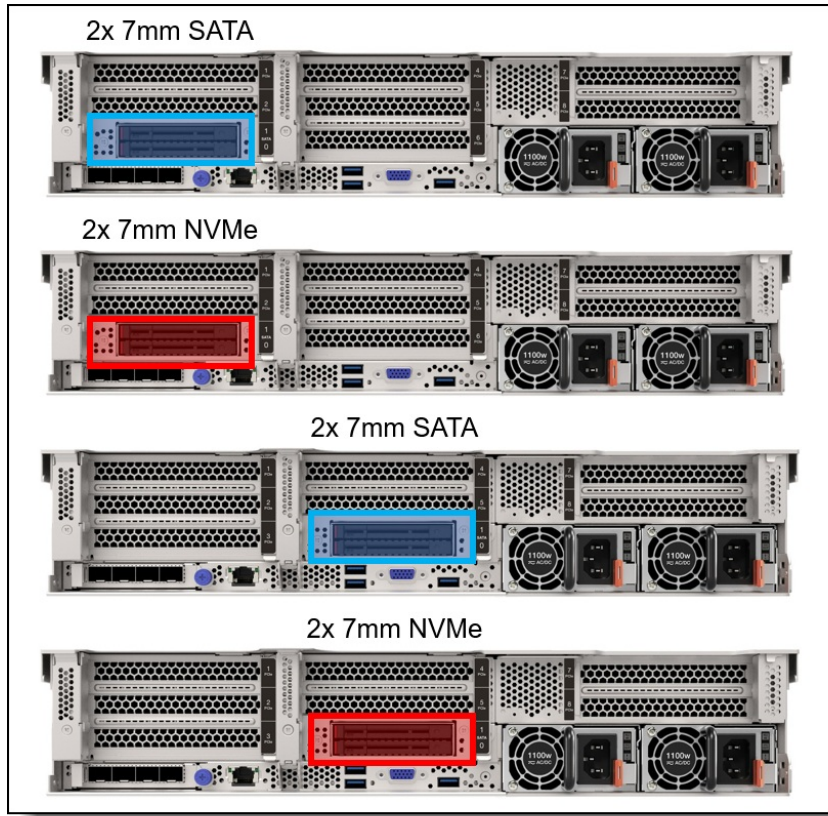


Figure 10. Rear 7mm drive bay configurations

The backplanes used to provide these drive bays are listed in the following table.

Table 19. Backplanes for rear drive bays

| Feature code                     | Description                                   | Maximum supported |
|----------------------------------|---|-------------------|
| Rear - 3.5-inch drive backplanes |   |                   |
| BAG7                             | ThinkSystem 2U 2x3.5" SAS/SATA Rear Backplane | 1                 |
| B8L3                             | ThinkSystem 1U/2U 4x3.5" SAS/SATA Backplane   | 1                 |
| Rear - 2.5-inch drive backplanes |   |                   |
| B8LV                             | ThinkSystem 2U 4x2.5" SAS/SATA Backplane      | 1                 |
| B97X                             | ThinkSystem 2U 8x2.5" SAS/SATA Rear Backplane | 1                 |
| Rear 7mm                         |   |                   |
| B8P2                             | ThinkSystem 2U 7mm Drive Kit w/ SATA RAID     | 1                 |
| B8P3                             | ThinkSystem 2U 7mm Drive Kit w/ NVMe RAID     | 1                 |

**Field upgrades:** Backplanes are available as part numbers for field upgrades along with require cable option kits, as described in the [Field upgrades](#) section below.

The use of rear drive bays has the following configuration rules:

- The use of rear bays restricts the number of slots and the choice of risers that are supported. See the [I/O expansion](#) section for details.

- The use of rear drive bays requires Riser 1 be installed, since power for the rear backplane comes from Riser 1
- The 7mm rear drive kit is supported in either slot 3 or slot 6 but not both at the same time.
- The 7mm drive enclosure is connected to an onboard NVMe port (connected to CPU 2) and cannot be connected to any installed RAID adapter or HBA.

### Supported drive bay combinations

This section describes the various combinations of 3.5-inch and 2.5-inch drives that the server supports. The drive bay combinations are grouped based on the drive type at the front of the server, 3.5-inch or 2.5-inch.

#### 3.5-inch drive bay chassis

The following table shows the supported combinations when the server is configured with a 3.5-inch chassis (where the front drive bays are 3.5-inch). The table lists the front, middle and rear backplanes required for each drive bay combination. The choice of storage controller for each configuration is listed in the [Controller selections](#) section.

Table 20. Drive bay and backplane combinations with 3.5-inch chassis (Blue cells = SAS/SATA, Purple cells = AnyBay, Red cells = NVMe) (S/S = SAS/SATA, Any = AnyBay)

| Cfg   | Total drives | NVMe drives§ | Front bays |          | Mid bays |          |           | Rear bays |          | 7mm NVMe/SATA | M.2  | Front backplane | Mid backplane | Rear backplane |
|---|--------------|--------------|------------|----------|----------|----------|-----------|-----------|----------|---------------|------|-----------------|---------------|----------------|
|   |              |              | S/S 3.5"   | Any 3.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |               |      |                 |               |                |
| <b>Configurations with 2 processors installed</b> |              |              |            |          |          |          |           |           |          |               |      |                 |               |                |
| A   | 8            | 0            | 8          | 0        | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 8-S/S        | None          | None           |
| B   | 12           | 0            | 12         | 0        | 0        | 0        | 0         | 0         | 0        | Opt*          | Opt* | 1x 12-S/S       | None          | None           |
| C   | 14           | 0            | 12         | 0        | 0        | 0        | 0         | 2         | 0        | Opt           | Opt  | 1x 12-S/S       | None          | 1x 2-3.5       |
| D   | 16           | 0            | 12         | 0        | 0        | 0        | 0         | 4         | 0        | Opt†          | Opt  | 1x 12-S/S       | None          | 1x 4-3.5       |
| E   | 20           | 0            | 12         | 0        | 4        | 0        | 0         | 4         | 0        | No            | Opt* | 1x 12-S/S       | 1x 4-3.5      | 1x 4-3.5       |
| F   | 16           | 0            | 12         | 0        | 0        | 0        | 0         | 0         | 4        | Opt           | Opt  | 1x 12-S/S       | None          | 1x 4-2.5       |
| G   | 20           | 0            | 12         | 0        | 4        | 0        | 0         | 0         | 4        | Opt*          | Opt* | 1x 12-S/S       | 1x 4-3.5      | 1x 4-2.5       |
| H   | 20           | 8 (1:1)      | 12         | 0        | 0        | 0        | 8         | 0         | 0        | Opt           | Opt  | 1x 12-S/S       | 2x NVMe       | None           |
| I   | 12           | 12 (1:1)     | 0          | 12       | 0        | 0        | 0         | 0         | 0        | No            | No   | 1x 12-AnyBay    | None          | None           |
| J   | 12           | 12 (1:4§)    | 0          | 12       | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 12-AnyBay    | None          | None           |
| K   | 16           | 12 (1:1)     | 0          | 12       | 0        | 0        | 0         | 4         | 0        | No            | No   | 1x 12-AnyBay    | None          | 1x 4-3.5       |
| L   | 20           | 12 (1:1)     | 0          | 12       | 4        | 0        | 0         | 4         | 0        | No            | No   | 1x 12-AnyBay    | 1x 4-3.5      | 1x 4-3.5       |
| <b>Configurations with 1 processor installed</b>  |              |              |            |          |          |          |           |           |          |               |      |                 |               |                |
| M   | 8            | 0            | 8          | 0        | 0        | 0        | 0         | 0         | 0        | No            | Opt† | 1x 8-S/S        | None          | None           |
| N   | 12           | 0            | 12         | 0        | 0        | 0        | 0         | 0         | 0        | No            | Opt  | 1x 12-S/S       | None          | None           |
| O   | 14           | 0            | 12         | 0        | 0        | 0        | 0         | 2         | 0        | No            | Opt  | 1x 12-S/S       | None          | 1x 2-3.5       |
| P   | 16           | 0            | 12         | 0        | 0        | 0        | 0         | 4         | 0        | No            | Opt  | 1x 12-S/S       | None          | 1x 4-3.5       |
| R   | 16           | 0            | 12         | 0        | 0        | 0        | 0         | 0         | 4        | No            | Opt  | 1x 12-S/S       | None          | 1x 4-2.5       |
| S   | 12           | 12 (1:4§)    | 0          | 12       | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 12-AnyBay    | None          | None           |

§ The text in parenthesis refers to the subscription ratio. See the [NVMe support](#) section for details.

\* If using Onboard SATA then 7mm drives and M.2 are mutually exclusive

† No support if using second adapter for rear drives

‡ No support if using Onboard SATA

## 2.5-inch drive bay chassis

The following table shows the supported combinations when the server is configured with a 2.5-inch chassis (where the front drive bays are 2.5-inch). The table lists the front, middle and rear backplanes required for each drive bay combination. The choice of storage controller for each configuration is listed in the [Controller selections](#) section.

Table 21. Drive bay and backplane combinations with 2.5-inch chassis (Blue cells = SAS/SATA, Red cells = NVMe, Purple cells = AnyBay) (S/S = SAS/SATA, Any = AnyBay)

| Cfg   | Total bays | NVMe drives§ | Front bays |          |           | Mid bays |          |           | Rear bays |          | 7mm NVMe/SATA | M.2  | Front backplane      | Mid b'plane | Rear b'plane |
|---|------------|--------------|------------|----------|-----------|----------|----------|-----------|-----------|----------|---------------|------|----------------------|-------------|--------------|
|   |            |              | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |               |      |                      |             |              |
| <b>Configurations with 2 processors installed</b> |            |              |            |          |           |          |          |           |           |          |               |      |                      |             |              |
| A   | 8          | 0            | 8          | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 8-S/S             | None        | None         |
| B   | 16         | 0            | 16         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Opt‡          | Opt‡ | 2x 8-S/S             | None        | None         |
| C   | 24         | 0            | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 3x 8-S/S             | None        | None         |
| D   | 28         | 0            | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 4        | Opt           | Opt  | 3x 8-S/S             | None        | 1x 4-2.5     |
| E   | 36         | 0            | 24         | 0        | 0         | 0        | 8        | 0         | 0         | 4        | Opt           | Opt  | 3x 8-S/S             | 2x 4-2.5    | 1x 4-2.5     |
| F   | 40         | 0            | 24         | 0        | 0         | 0        | 8        | 0         | 0         | 8        | No            | Opt  | 3x 8-S/S             | 2x 4-2.5    | 2x 4-2.5     |
| G   | 8          | 8 (1:1)      | 0          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 8-NVMe            | None        | None         |
| H   | 16         | 16 (1:1)     | 0          | 0        | 16        | 0        | 0        | 0         | 0         | 0        | No            | No   | 2x 8-NVMe            | None        | None         |
| I   | 24         | 24 (1:1)     | 0          | 0        | 24        | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 3x 8-NVMe            | None        | None         |
| J   | 32         | 32 (1:2)     | 0          | 0        | 24        | 0        | 0        | 8         | 0         | 0        | Opt           | Opt  | 3x 8-NVMe            | 2x 4-NVMe   | None         |
| K   | 16         | 8 (1:1)      | 8          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Opt*          | Opt* | 1x 8-S/S + 1x 8-NVMe | None        | None         |
| L   | 24         | 8 (1:1)      | 16         | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 2x 8-S/S + 1x 8-NVMe | None        | None         |
| M   | 24         | 16 (1:1)     | 8          | 0        | 16        | 0        | 0        | 0         | 0         | 0        | No            | No   | 1x 8-S/S + 2x 8-NVMe | None        | None         |
| N   | 8          | 8 (1:1)      | 0          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 8-Any             | None        | None         |
| O   | 8          | 8 (1:4§)     | 0          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 8-Any             | None        | None         |
| P   | 16         | 16 (1:4§)    | 0          | 16       | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 2x 8-Any             | None        | None         |
| Q   | 16         | 16 (1:1)     | 0          | 8        | 8         | 0        | 0        | 0         | 0         | 0        | No            | No   | 1x 8-Any + 1x 8-NVMe | None        | None         |
| R   | 16         | 8 (1:1)      | 8          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 8-S/S + 1x 8-Any  | None        | None         |



| Cfg  | Total bays | NVMe drives§ | Front bays |          |           | Mid bays |          |           | Rear bays |          | 7mm NVMe/SATA | M.2  | Front backplane     | Mid b'plane | Rear b'plane |
|--|------------|--------------|------------|----------|-----------|----------|----------|-----------|-----------|----------|---------------|------|---------------------|-------------|--------------|
|  |            |              | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |               |      |                     |             |              |
| S  | 24         | 8 (1:1)      | 16         | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 2x 8-S/S + 1x 8-Any | None        | None         |
| T  | 28         | 8 (1:1)      | 16         | 8        | 0         | 0        | 0        | 0         | 0         | 4        | Opt           | Opt  | 2x 8-S/S + 1x 8-Any | None        | 1x 4-2.5     |
| <b>Configurations with 1 processor installed</b> |            |              |            |          |           |          |          |           |           |          |               |      |                     |             |              |
| U  | 8          | 0            | 8          | 0        | 0         | 0        | 0        | 0         | 0         | 0        | No            | Opt‡ | 1x 8-S/S            | None        | None         |
| V  | 16         | 0            | 16         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | No            | Opt  | 2x 8-S/S            | None        | None         |
| W  | 24         | 0            | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | No            | Opt  | 3x 8-S/S            | None        | None         |
| X  | 28         | 0            | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 4        | No            | Opt  | 3x 8-S/S            | None        | 1x 4-2.5     |
| Z  | 8          | 8 (1:4§)     | 0          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | 1x 8-Any            | None        | None         |
| AA   | 8          | 8 (1:1)      | 0          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | No            | No   | 1x 8-NVMe           | None        | None         |

§ The text in parenthesis refers to the subscription ratio. See the [NVMe support](#) section for details.

\* No support if using OB SATA + OB NVMe

‡ No support if using OB SATA

## Controller selections

This section helps you determine with storage adapter are supported for your desired drive bay configuration.

In the tables, the controllers are grouped as follows:

- RAID 8i corresponds to any of the following:
  - ThinkSystem RAID 530-8i PCIe 12Gb Adapter, 7Y37A01082
  - ThinkSystem RAID 5350-8i PCIe 12Gb Adapter, 4Y37A72482
  - ThinkSystem RAID 540-8i PCIe Gen4 12Gb Adapter, 4Y37A78834
  - ThinkSystem RAID 930-8i 2GB Flash PCIe 12Gb Adapter, 7Y37A01084
  - ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter, 4Y37A72483
  - ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter, 4Y37A09728
  - ThinkSystem RAID 940-8i 8GB Flash PCIe Gen4 12Gb Adapter, 4Y37A09729
- RAID 16i corresponds to any of the following:
  - ThinkSystem RAID 530-16i PCIe 12Gb Adapter, 4Y37A09727
  - ThinkSystem RAID 540-16i PCIe Gen4 12Gb Adapter, 4Y37A78835
  - ThinkSystem RAID 930-16i 4GB Flash PCIe 12Gb Adapter, 7Y37A01085
  - ThinkSystem RAID 9350-16i 4GB Flash PCIe 12Gb Adapter, 4Y37A72485
  - ThinkSystem RAID 940-16i 4GB Flash PCIe Gen4 12Gb Adapter, 4Y37A78600
  - ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter, 4Y37A09730
- RAID 16i Int (also referred to as RAID 16i CFF, compact form factor) corresponds to the following:
  - ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Internal Adapter, 4Y37A09735
- RAID 32i corresponds to the following:
  - ThinkSystem RAID 940-32i 8GB Flash PCIe Gen4 12Gb Adapter, 4Y37A09733
- RAID 940-8i/16i Trimode-U.3 corresponds to the following (or equivalent adapter part number with the latest adapter firmware):
  - ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter for U.3, BDY4
  - ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter for U.3, BGM1
  - ThinkSystem RAID 940-16i 4GB Flash PCIe Gen4 12Gb Adapter for U.3, BM36
  - ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Internal Adapter for U.3, BGM2
  - ThinkSystem RAID 940-8i 8GB Flash PCIe Gen4 12Gb Adapter for U.3, BGM0

- Exp Int corresponds to the following:
  - ThinkSystem 48 port 12Gb Internal Expander
- HBA 8i corresponds to the following:
  - ThinkSystem 430-8i SAS/SATA 12Gb HBA, 7Y37A01088
  - ThinkSystem 4350-8i SAS/SATA 12Gb HBA, 4Y37A72480
  - ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA, 4Y37A78601
- HBA 16i corresponds to the following:
  - ThinkSystem 430-16i SAS/SATA 12Gb HBA, 7Y37A01089
  - ThinkSystem 4350-16i SAS/SATA 12Gb HBA, 4Y37A72481
  - ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA, 4Y37A78602
- HBA 16i Int (also referred to as HBA 16i CFF) corresponds to the following:
  - ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb Internal HBA, 4Y37A09725
- OB SATA (onboard SATA) corresponds to the following in CTO orders:
  - Onboard SATA AHCI Mode, feature AVUX
- OB NVMe (onboard NVMe) corresponds to the following in CTO orders:
  - Non RAID NVMe, feature BC4V
- Switch-8P corresponds to:
  - ThinkSystem 1610-8P NVMe Switch Adapter, 4Y37A09764
  - ThinkSystem 1611-8P PCIe Gen4 Switch Adapter, 4Y37A09737
- Retimer:
  - ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter, 4C57A65446

Many of the configurations also support the 7mm rear drive bays (which can be either SATA or NVMe) and the M.2 adapter. Support is marked as "Opt" (short for Optional). "No" means no support for the respective drive type. Restrictions are noted as appropriate. See the [7mm drives](#) and [M.2 drives](#) sections for details.

### 3.5-inch chassis configurations

The following table lists the supported drive bay combinations for configurations with 3.5-inch front drive bays, plus the list of supported controller combinations supported by each of those drive bay combinations. Information about the controllers can be found in the [Controllers for internal storage](#) section.

Table 22. Drive bay combinations with 3.5-inch chassis (Blue cells = SAS/SATA, Purple = AnyBay, Red cells = NVMe)

| Cfg  | Front bays |          | Mid bays |          |           | Rear bays |          | 7mm NVMe/SATA | M.2  | Supported controller combinations (choose one) (drive count) (OB=onboard, F=Front, M=Mid, R=Rear)   |
|--|------------|----------|----------|----------|-----------|-----------|----------|---------------|------|---|
|  | S/S 3.5"   | Any 3.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |               |      |   |
| Configurations with 2 processors installed |            |          |          |          |           |           |          |               |      |   |
| A  | 8          | 0        | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>OB SATA (8) (F)</li> <li>1x RAID/HBA 8i (8) (F)</li> </ul>   |
| B  | 12         | 0        | 0        | 0        | 0         | 0         | 0        | Opt*          | Opt* | <ul style="list-style-type: none"> <li>OB SATA (12) (F)</li> <li>1x RAID/HBA 16i (12) (F)</li> </ul>  |
| C  | 12         | 0        | 0        | 0        | 0         | 2         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (14) (F+R)</li> <li>1x RAID/HBA 16i (12) (F) + 1x RAID 8i (2) (R)</li> </ul>               |
| D  | 12         | 0        | 0        | 0        | 0         | 4         | 0        | Opt†          | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (16) (F+R)</li> <li>1x RAID/HBA 16i (12) (F) + RAID 8i (4) (R)</li> </ul>                  |
| E  | 12         | 0        | 4        | 0        | 0         | 4         | 0        | No            | Opt* | <ul style="list-style-type: none"> <li>OB SATA (12) (F) + HBA 8i (8) (M+R)</li> <li>1x RAID 32i (20) (F+M+R)</li> </ul>                           |
| F  | 12         | 0        | 0        | 0        | 0         | 0         | 4        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (16) (F+R)</li> <li>1x RAID/HBA 16i (12) (F) + RAID 8i (4) (R)</li> </ul>                  |
| G  | 12         | 0        | 4        | 0        | 0         | 0         | 4        | Opt*          | Opt* | <ul style="list-style-type: none"> <li>OB SATA (12) (F) + HBA 8i (8) (M+R)</li> <li>1x RAID 32i (20) (F+M+R)</li> </ul>                           |
| H  | 12         | 0        | 0        | 0        | 8         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (12) (F) + OB NVMe (8) (M)</li> </ul>  |
| I  | 0          | 12       | 0        | 0        | 0         | 0         | 0        | No            | No   | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (12) + OB NVMe (12) (F)</li> </ul>   |
| J  | 0          | 12       | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID 940-16i Trimode-U.3 (12) (F)§</li> </ul>   |
| K  | 0          | 12       | 0        | 0        | 0         | 4         | 0        | No            | No   | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i + 12x OB NVMe (F+R)</li> <li>1x RAID/HBA 16i (F) + 12x OB NVMe + 1x RAID 8i (R)</li> </ul> |
| L  | 0          | 12       | 4        | 0        | 0         | 4         | 0        | No            | No   | <ul style="list-style-type: none"> <li>1x RAID 32i (20) + OB NVMe (12) (F+M+R)</li> </ul>   |
| Configurations with 1 processor installed  |            |          |          |          |           |           |          |               |      |   |
| M  | 8          | 0        | 0        | 0        | 0         | 0         | 0        | No            | Opt‡ | <ul style="list-style-type: none"> <li>OB SATA (8) (F)</li> <li>1x RAID/HBA 8i (8) (F)</li> </ul>   |
| N  | 12         | 0        | 0        | 0        | 0         | 0         | 0        | No            | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (12) (F)</li> </ul>  |
| O  | 12         | 0        | 0        | 0        | 0         | 2         | 0        | No            | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (14) (F+R)</li> </ul>  |
| P  | 12         | 0        | 0        | 0        | 0         | 4         | 0        | No            | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (16) (F+R)</li> </ul>  |
| R  | 12         | 0        | 0        | 0        | 0         | 0         | 4        | No            | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 16i (16) (F+R)</li> </ul>  |
| S  | 0          | 12       | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID 940-16i Trimode-U.3 (12) (F)§</li> </ul>   |

\* If using OB SATA then 7mm drives and M.2 are mutually exclusive

† No support if using second adapter for rear drives

‡ No support if using OB SATA

§ SAS, SATA or U.3 NVMe drives supported; U.2 NVMe drives not supported. Each NVMe drive has a PCIe x1 connection.

## 2.5-inch chassis configurations

The following table lists the supported drive bay combinations for configurations with 2.5-inch front drive bays, plus the list of supported controller combinations supported by each of those drive bay combinations. Information about the controllers can be found in the [Controllers for internal storage](#) section.

Table 23. Drive bay combinations with 2.5-inch chassis (Blue = SAS/SATA, Purple = AnyBay, Red = NVMe)

| Cfg   | Front bays |          |           | Mid bays |          |           | Rear bays |          | 7mm NVMe/SATA | M.2  | Supported controller combinations (choose one) (drive count) (OB=onboard, F=Front, M=Mid, R=Rear)  |
|---|------------|----------|-----------|----------|----------|-----------|-----------|----------|---------------|------|--|
|   | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |               |      |  |
| <b>Configurations with 2 processors installed</b> |            |          |           |          |          |           |           |          |               |      |  |
| A   | 8          | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>OB SATA (8) (F)</li> <li>1x RAID/HBA 8i (8) (F)</li> <li>1x RAID/HBA 16i (8) (F)</li> <li>1x RAID/HBA 16i Int (8) (F)</li> </ul>  |
| B   | 16         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Opt†          | Opt† | <ul style="list-style-type: none"> <li>OB SATA (16) (F)</li> <li>2x RAID/HBA 8i (16) (F)</li> <li>1x RAID/HBA 16i (16) (F)</li> <li>1x RAID/HBA 16i Int (16) (F)</li> </ul>  |
| C   | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>3x RAID 8i (24) (F)</li> <li>1x RAID/HBA 8i + Exp 36i Int (24) (F)</li> <li>1x RAID/HBA 16i Int + Exp 36i Int (24) (F)</li> <li>1x RAID 32i (24) (F)</li> </ul>   |
| D   | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 4        | Opt           | Opt  | <ul style="list-style-type: none"> <li>3x RAID 8i (24) (F) + 1x RAID 8i (4) (R)</li> <li>1x RAID/HBA 8i + Exp 36i Int (28) (F+R)</li> <li>1x RAID/HBA 16i Int + Exp 36i Int (28) (F+R)</li> <li>1x RAID 32i (28) (F+R)</li> </ul>  |
| E   | 24         | 0        | 0         | 0        | 8        | 0         | 0         | 4        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 8i + Exp 36i Int (36) (F+M+R)</li> <li>1x RAID/HBA 16i Int + Exp 36i Int (36) (F+M+R)</li> </ul>  |
| F   | 24         | 0        | 0         | 0        | 8        | 0         | 0         | 8        | No            | Opt  | <ul style="list-style-type: none"> <li>1x RAID 16i Int + Exp 36i Int (40) (F+M+R)</li> </ul>   |
| G   | 0          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>OB NVMe (8) (F)</li> </ul>  |
| H   | 0          | 0        | 16        | 0        | 0        | 0         | 0         | 0        | No            | No   | <ul style="list-style-type: none"> <li>OB NVMe (12) + 1x Switch-8P (4) (F)</li> <li>OB NVMe (12) + 1x Retimer (4) (F)</li> </ul>   |
| I   | 0          | 0        | 24        | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>OB NVMe (8) + 4x Retimer (4) (F)</li> <li>3x Switch-8P (24) (F) (1:2 oversub)</li> </ul>  |
| J   | 0          | 0        | 24        | 0        | 0        | 8         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>3x Switch-8P (24) (F) + 1x Switch-8P (8) (M)</li> </ul>   |
| K   | 8          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Opt*          | Opt* | <ul style="list-style-type: none"> <li>OB SATA (8) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 8i (8) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i (8) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i Int (8) + OB NVMe (8) (F)</li> </ul>  |
| L   | 16         | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>2x RAID/HBA 8i (16) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i (16) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i Int (16) + OB NVMe (8) (F)</li> <li>1x RAID 32i (16) + OB NVMe (8) (F)</li> </ul>  |
| M   | 8          | 0        | 16        | 0        | 0        | 0         | 0         | 0        | No            | No   | <ul style="list-style-type: none"> <li>1x RAID/HBA 8i (8) + OB NVMe (12) + 1x Switch-8P (4) (F)</li> <li>1x RAID/HBA 16i (8) + OB NVMe (12) + 1x Switch-8P (4) (F)</li> <li>1x RAID/HBA 8i (8) + OB NVMe (12) + 1x Retimer (4) (F)</li> <li>1x RAID/HBA 16i (8) + OB NVMe (12) + 1x Retimer (4) (F)</li> </ul> |

| Cfg  | Front bays |          |           | Mid bays |          |           | Rear bays |          | 7mm NVMe/SATA | M.2  | Supported controller combinations (choose one) (drive count) (OB=onboard, F=Front, M=Mid, R=Rear)  |
|--|------------|----------|-----------|----------|----------|-----------|-----------|----------|---------------|------|--|
|  | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |               |      |  |
| N  | 0          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 8i (8) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i (8) + 8x OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i Int (8) + OB NVMe (8) (F)</li> </ul>  |
| O  | 0          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID 940-8i Trimode-U.3 (8) (F)§</li> <li>1x RAID 940-16i Trimode-U.3 (8) (F)§</li> <li>1x RAID 940-16i Int Trimode-U.3 (8) (F)§</li> </ul>  |
| P  | 0          | 16       | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>2x RAID 940-8i Trimode-U.3 (8) (F)§</li> <li>1x RAID 940-16i Trimode-U.3 (8) (F)§</li> <li>1x RAID 940-16i Int Trimode-U.3 (8) (F)§</li> </ul>  |
| Q  | 0          | 8        | 8         | 0        | 0        | 0         | 0         | 0        | No            | No   | <ul style="list-style-type: none"> <li>1x RAID/HBA 8i (8) + OB NVMe (12) + 1x Switch-8P (4) (F)</li> <li>1x RAID/HBA 16i + OB NVMe (12) + 1x Switch-8P (4) (F)</li> <li>1x RAID/HBA 8i (8) + OB NVMe (12) + 1x Retimer (4) (F)</li> <li>1x RAID/HBA 16i + OB NVMe (12) + 1x Retimer (4) (F)</li> </ul> |
| R  | 8          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>2x RAID/HBA 8i (16) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i (16) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i Internal (16) + OB NVMe (8) (F)</li> <li>1x RAID 32i (16) + OB NVMe (8) (F)</li> </ul>   |
| S  | 16         | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>3x RAID/HBA 8i (24) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 8i + Exp 36i Int (24) + OB NVMe (8) (F)</li> <li>1x RAID/HBA 16i Int + Exp 36i Int (24) + OB NVMe (8) (F)</li> <li>1x RAID 32i (24) + OB NVMe (8) (F)</li> </ul>                                     |
| T  | 16         | 8        | 0         | 0        | 0        | 0         | 0         | 4        | Opt           | Opt  | <ul style="list-style-type: none"> <li>3x RAID/HBA 8i (24) + OB NVMe (8) (F) + 1x RAID/HBA 8i (4) (R)</li> <li>1x RAID/HBA 8i + Exp 36i Int (28) + OB NVMe (8) (F+R)</li> <li>1x RAID/HBA 16i Int + Exp 36i Int (28) + OB NVMe (8) (F+R)</li> <li>1x RAID 32i (28) + OB NVMe (8) (F+R)</li> </ul>      |
| <b>Configurations with 1 processor installed</b> |            |          |           |          |          |           |           |          |               |      |  |
| U  | 8          | 0        | 0         | 0        | 0        | 0         | 0         | 0        | No            | Opt‡ | <ul style="list-style-type: none"> <li>OB SATA (8) (F)</li> <li>1x RAID/HBA 8i (8) (F)</li> <li>1x RAID/HBA 16i (8) (F)</li> </ul>   |
| V  | 16         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | No            | Opt  | <ul style="list-style-type: none"> <li>2x RAID/HBA 8i (16) (F)</li> <li>1x RAID/HBA 16i (16) (F)</li> </ul>  |
| W  | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | No            | Opt  | <ul style="list-style-type: none"> <li>3x RAID/HBA 8i (24) (F)</li> <li>1x RAID/HBA 8i + Exp 36i Int (24) (F)</li> <li>1x RAID 32i (24) (F)</li> </ul>   |
| X  | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 4        | No            | Opt  | <ul style="list-style-type: none"> <li>1x RAID/HBA 8i + Exp 36i Int (28) (F)</li> <li>1x RAID 32i (28) (F)</li> </ul>  |
| Z  | 0          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Opt           | Opt  | <ul style="list-style-type: none"> <li>1x RAID 940-8i Trimode-U.3 (8) (F)§</li> <li>1x RAID 940-16i Trimode-U.3 (8) (F)§</li> <li>1x RAID 940-16i Int Trimode-U.3 (8) (F)§</li> </ul>  |
| AA   | 0          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | No            | No   | <ul style="list-style-type: none"> <li>OB NVMe (4) + Switch-8P (4) (F)</li> <li>OB NVMe (4) + Retimer (4) (F)</li> </ul>   |

\* No support if using OB SATA + OB NVMe

‡ No support if using OB SATA

§ SAS, SATA or U.3 NVMe drives supported; U.2 NVMe drives not supported. Each NVMe drive has a PCIe x1 connection.

† Configurations that use the Retimer adapter do not support drives in the following NVMe drive families: CM6-V, CM6-R and CM5-V. See the [Internal drive options](#) section for the specific drives not supported.

## Field upgrades

The SR665 is orderable without drive bays, allowing you to add a backplane, cabling and controllers as field upgrades. The server also supports upgrading some configurations by adding additional front drive bays (for example, upgrading from 8 to 16x 2.5-inch drive bays).

**Upgrade path:** The key criteria for upgrade support is to ensure that the target configuration is one of the supported drive bay configurations as listed in the [Supported drive bay combinations](#) section.

For example, if you are upgrading a 2.5-inch drive configuration from Config A to Config B, you will need these additional options:

- 4XH7A60930, 2U 8x2.5" SAS/SATA Backplane option Kit
- 4X97A59775, SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit

To add drive bays you will need to order both drive backplanes and cable kits. Backplane kits do not include cables.

Topics in this section:

- [3.5-inch chassis drive bay upgrades](#)
- [2.5-inch chassis drive bay upgrades](#)

For more information about the backplane kits and cable kits, see the Information Center:

[https://thinksystem.lenovofiles.com/help/topic/7D2W/system\\_options.html?cp=4\\_13\\_7](https://thinksystem.lenovofiles.com/help/topic/7D2W/system_options.html?cp=4_13_7)

### 3.5-inch chassis drive bay upgrades

The table below lists the backplane kits and cable kits needed to build one of the supported 3.5-inch chassis configurations. The configurations each have a letter that matches the configurations listed in the [Supported drive bay combinations](#) and [Controller selections](#) sections.

Table 24. Drive bay field upgrade for the 3.5-inch chassis (Blue = SAS/SATA, Purple = AnyBay, Red = NVMe)

| Cfg   | Front bays |          | Mid bays |           | Rear bays |          | Backplane and cable kits required (all required)  |
|-------|------------|----------|----------|-----------|-----------|----------|---|
|       | S/S 3.5"   | Any 3.5" | S/S 3.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |   |
| A & M | 8          | 0        | 0        | 0         | 0         | 0        | 1. <b>4XH7A60932</b> , ThinkSystem SR650 V2/SR665 8x3.5" SAS/SATA Backplane Option Kit<br>2. <b>4X97A80381</b> , ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b> , ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit  |
| B & N | 12         | 0        | 0        | 0         | 0         | 0        | 1. <b>4XH7A60929</b> , ThinkSystem SR650 V2/SR665 12x3.5" SAS/SATA Backplane Option Kit<br>2. <b>4X97A80381</b> , ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b> , ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit |

| Cfg   | Front bays |          | Mid bays |           | Rear bays |          | Backplane and cable kits required (all required)  |
|-------|------------|----------|----------|-----------|-----------|----------|---|
|       | S/S 3.5"   | Any 3.5" | S/S 3.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |   |
| C & O | 12         | 0        | 0        | 0         | 2         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60929</b>, ThinkSystem SR650 V2/SR665 12x3.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60940</b>, ThinkSystem SR650 V2/SR665 Rear 2x3.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4X97A80381</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit</li> <li>4. <b>4X97A80383</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59764</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol>  |
| D & P | 12         | 0        | 0        | 0         | 4         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60929</b>, ThinkSystem SR650 V2/SR665 12x3.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60939</b>, ThinkSystem SR650 V2/SR665 Rear 4x3.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4X97A80381</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit</li> <li>4. <b>4X97A80383</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59764</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol>  |
| E     | 12         | 0        | 4        | 0         | 4         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60929</b>, ThinkSystem SR650 V2/SR665 12x3.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60937</b>, ThinkSystem SR665 Middle 4x3.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60939</b>, ThinkSystem SR650 V2/SR665 Rear 4x3.5" SAS/SATA Backplane Option Kit</li> <li>4. <b>4X97A80381</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit</li> <li>5. <b>4X97A80384</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane SAS/SATA Cable Kit v2 or <b>4X97A59765</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane SAS/SATA Cable Kit</li> <li>6. <b>4X97A80383</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59764</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol> |
| F & R | 12         | 0        | 0        | 0         | 0         | 4        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60929</b>, ThinkSystem SR650 V2/SR665 12x3.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60938</b>, ThinkSystem SR650 V2/SR665 Rear 4x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4X97A80381</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit</li> <li>4. <b>4X97A80383</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59764</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol>  |

| Cfg   | Front bays |          | Mid bays |           | Rear bays |          | Backplane and cable kits required (all required)  |
|-------|------------|----------|----------|-----------|-----------|----------|---|
|       | S/S 3.5"   | Any 3.5" | S/S 3.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |   |
| G     | 12         | 0        | 4        | 0         | 0         | 4        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60929</b>, ThinkSystem SR650 V2/SR665 12x3.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60937</b>, ThinkSystem SR665 Middle 4x3.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60938</b>, ThinkSystem SR650 V2/SR665 Rear 4x2.5" SAS/SATA Backplane Option Kit</li> <li>4. <b>4X97A80381</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit</li> <li>5. <b>4X97A80384</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane SAS/SATA Cable Kit v2 or <b>4X97A59765</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane SAS/SATA Cable Kit</li> <li>6. <b>4X97A80383</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59764</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol> |
| H     | 12         | 0        | 0        | 8         | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60929</b>, ThinkSystem SR650 V2/SR665 12x3.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60936</b>, ThinkSystem SR665 Middle 8x2.5" NVMe Backplane Option Kit</li> <li>3. <b>4X97A80381</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit</li> <li>4. <b>4X97A80380</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane NVMe Cable Kit v2 or <b>4X97A59771</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane NVMe Cable Kit</li> </ol>   |
| I     | 0          | 12       | 0        | 0         | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60933</b>, ThinkSystem SR665 12x3.5" AnyBay Backplane Option Kit</li> <li>2. <b>4X97A80382</b>, ThinkSystem SR665 3.5" Chassis Front Backplane Anybay Cable Kit v2 or <b>4X97A59763</b>, ThinkSystem SR665 3.5" Chassis Front Backplane Anybay Cable Kit</li> </ol>   |
| J & S | 0          | 12       | 0        | 0         | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60933</b>, ThinkSystem SR665 12x3.5" AnyBay Backplane Option Kit</li> <li>2. <b>4X97A80381</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit v2 or <b>4X97A59762</b>, ThinkSystem SR665 3.5" Chassis Front Backplane SAS/SATA Cable Kit</li> </ol>   |
| K     | 0          | 12       | 0        | 0         | 4         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60933</b>, ThinkSystem SR665 12x3.5" AnyBay Backplane Option Kit</li> <li>2. <b>4XH7A60939</b>, ThinkSystem SR650 V2/SR665 Rear 4x3.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4X97A80382</b>, ThinkSystem SR665 3.5" Chassis Front Backplane Anybay Cable Kit v2 or <b>4X97A59763</b>, ThinkSystem SR665 3.5" Chassis Front Backplane Anybay Cable Kit</li> <li>4. <b>4X97A80383</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59764</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol>   |
| L     | 0          | 12       | 4        | 0         | 4         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60933</b>, ThinkSystem SR665 12x3.5" AnyBay Backplane Option Kit</li> <li>2. <b>4XH7A60937</b>, ThinkSystem SR665 Middle 4x3.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60939</b>, ThinkSystem SR650 V2/SR665 Rear 4x3.5" SAS/SATA Backplane Option Kit</li> <li>4. <b>4X97A80382</b>, ThinkSystem SR665 3.5" Chassis Front Backplane Anybay Cable Kit v2 or <b>4X97A59763</b>, ThinkSystem SR665 3.5" Chassis Front Backplane Anybay Cable Kit</li> <li>5. <b>4X97A80384</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane SAS/SATA Cable Kit v2 or <b>4X97A59765</b>, ThinkSystem SR665 3.5" Chassis Middle Backplane SAS/SATA Cable Kit</li> <li>6. <b>4X97A80383</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59764</b>, ThinkSystem SR665 3.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol>                |



## 2.5-inch chassis drive bay upgrades

The table below lists the backplane kits and cable kits needed to build one of the supported 2.5-inch chassis configurations. The configurations each have a letter that matches the configurations listed in the [Supported drive bay combinations](#) and [Controller selections](#) sections.

**Note:** Front drive cable kits are based on the location of the backplane in the server. The three backplane locations are BP1, BP2 and BP3 as shown in the following figure.

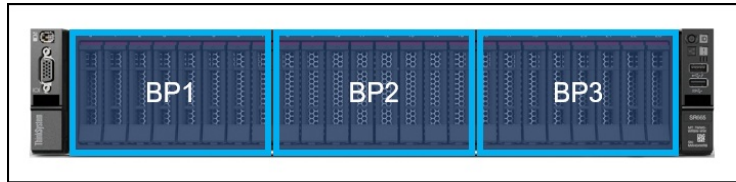


Figure 11. Backplane numbering

Table 25. Drive bay field upgrade for the 2.5-inch chassis (Blue = SAS/SATA, Purple = AnyBay, Red = NVMe)

| Cfg   | Front bays |          |           | Mid bays |           | Rear     | Backplane and cable kits required (all required)  |
|-------|------------|----------|-----------|----------|-----------|----------|---|
|       | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 2.5" | NVMe 2.5" | S/S 2.5" |   |
| A & U | 8          | 0        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> </ol>   |
| B & V | 16         | 0        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>4. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> </ol>  |
| C & W | 24         | 0        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>4. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>5. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>6. <b>4X97A80395</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit v2 or <b>4X97A59777</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit</li> </ol> |

| Cfg   | Front bays |          |           | Mid bays |           | Rear     | Backplane and cable kits required (all required)  |
|-------|------------|----------|-----------|----------|-----------|----------|---|
|       | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 2.5" | NVMe 2.5" | S/S 2.5" |   |
| D & X | 24         | 0        | 0         | 0        | 0         | 4        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>4. <b>4XH7A60938</b>, ThinkSystem SR650 V2/SR665 Rear 4x2.5" SAS/SATA Backplane Option Kit</li> <li>5. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>6. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>7. <b>4X97A80395</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit v2 or <b>4X97A59777</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit</li> <li>8. <b>4X97A80397</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59779</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol>   |
| E     | 24         | 0        | 0         | 8        | 0         | 4        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>4. <b>4XH7A60935</b>, ThinkSystem SR665 Middle 8x2.5" SAS/SATA Backplane Option Kit</li> <li>5. <b>4XH7A60938</b>, ThinkSystem SR650 V2/SR665 Rear 4x2.5" SAS/SATA Backplane Option Kit</li> <li>6. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>7. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>8. <b>4X97A80395</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit v2 or <b>4X97A59777</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit</li> <li>9. <b>4X97A80398</b>, ThinkSystem SR665 2.5" Chassis Middle Backplane SAS/SATA Cable Kit v2 or <b>4X97A59780</b>, ThinkSystem SR665 2.5" Chassis Middle Backplane SAS/SATA Cable Kit</li> <li>10. <b>4X97A80397</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59779</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol> |

| Cfg         | Front bays |          |           | Mid bays |           | Rear     | Backplane and cable kits required (all required)  |
|-------------|------------|----------|-----------|----------|-----------|----------|---|
|             | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 2.5" | NVMe 2.5" | S/S 2.5" |   |
| F           | 24         | 0        | 0         | 8        | 0         | 8        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>4. <b>4XH7A60935</b>, ThinkSystem SR665 Middle 8x2.5" SAS/SATA Backplane Option Kit</li> <li>5. <b>4XH7A60941</b>, ThinkSystem SR650 V2/SR665 Rear 8x2.5" SAS/SATA Backplane Option Kit</li> <li>6. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>7. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>8. <b>4X97A80395</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit v2 or <b>4X97A59777</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit</li> <li>9. <b>4X97A80398</b>, ThinkSystem SR665 2.5" Chassis Middle Backplane SAS/SATA Cable Kit v2 or <b>4X97A59780</b>, ThinkSystem SR665 2.5" Chassis Middle Backplane SAS/SATA Cable Kit</li> <li>10. <b>4X97A80397</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59779</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol> |
| G & AA      | 0          | 0        | 8         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>2. <b>4X97A80392</b>, ThinkSystem SR665 2.5" Chassis Front BP1 NVMe Cable Kit v2 or <b>4X97A59774</b>, ThinkSystem SR665 2.5" Chassis Front BP1 NVMe Cable Kit</li> </ol>  |
| H           | 0          | 0        | 16        | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>2. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>3. <b>4X97A80399</b>, ThinkSystem SR665 2.5" Chassis Front BP1+2 16x NVMe System+Adapter Cable Kit v2 or <b>4X97A59781</b>, ThinkSystem SR665 2.5" Chassis Front BP1+2 16x NVMe System+Adapter Cable Kit</li> </ol>  |
| I (switch)  | 0          | 0        | 24        | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>2. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>3. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>4. <b>4X97A80401</b>, ThinkSystem SR665 2.5" Chassis 24x and 32x NVMe Cable Kit v2 or <b>4X97A59783</b>, ThinkSystem SR665 2.5" Chassis 24x and 32x NVMe Cable Kit</li> </ol>  |
| I (retimer) | 0          | 0        | 24        | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>2. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>3. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>4. <b>4X97A59855</b>, ThinkSystem SR665 2.5" Chassis 24x NVMe Retimer Cable Kit</li> </ol>   |

| Cfg | Front bays |          |           | Mid bays |           | Rear     | Backplane and cable kits required (all required)   |
|-----|------------|----------|-----------|----------|-----------|----------|--|
|     | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 2.5" | NVMe 2.5" | S/S 2.5" |  |
| J   | 0          | 0        | 24        | 0        | 8         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>2. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>3. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>4. <b>4XH7A60936</b>, ThinkSystem SR665 Middle 8x2.5" NVMe Backplane Option Kit</li> <li>5. <b>4X97A80401</b>, ThinkSystem SR665 2.5" Chassis 24x and 32x NVMe Cable Kit v2 or <b>4X97A59783</b>, ThinkSystem SR665 2.5" Chassis 24x and 32x NVMe Cable Kit</li> </ol>  |
| K   | 8          | 0        | 8         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>3. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>4. <b>4X97A80394</b>, ThinkSystem SR665 2.5" Chassis Front BP2 NVMe Cable Kit v2 or <b>4X97A59776</b>, ThinkSystem SR665 2.5" Chassis Front BP2 NVMe Cable Kit</li> </ol>  |
| L   | 16         | 0        | 8         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>4. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>5. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>6. <b>4X97A80396</b>, ThinkSystem SR665 2.5" Chassis Front BP3 NVMe Cable Kit v2 or <b>4X97A59778</b>, ThinkSystem SR665 2.5" Chassis Front BP3 NVMe Cable Kit</li> </ol> |
| M   | 8          | 0        | 16        | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>3. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>4. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>5. <b>4X97A80400</b>, ThinkSystem SR665 2.5" Chassis Front BP2+3 16x NVMe System+Adapter Cable Kit v2 or <b>4X97A59782</b>, ThinkSystem SR665 2.5" Chassis Front BP2+3 16x NVMe System+Adapter Cable Kit</li> </ol>  |
| N   | 0          | 8        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>2. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>3. <b>4X97A80392</b>, ThinkSystem SR665 2.5" Chassis Front BP1 NVMe Cable Kit v2 or <b>4X97A59774</b>, ThinkSystem SR665 2.5" Chassis Front BP1 NVMe Cable Kit</li> </ol>   |

| Cfg | Front bays |          |           | Mid bays |           | Rear     | Backplane and cable kits required (all required)   |
|-----|------------|----------|-----------|----------|-----------|----------|--|
|     | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 2.5" | NVMe 2.5" | S/S 2.5" |  |
| O   | 0          | 8        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>2. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> </ol>   |
| P   | 0          | 16       | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>2. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>3. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>4. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> </ol>   |
| Q   | 0          | 8        | 8         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>2. <b>4XH7A61059</b>, ThinkSystem SR665 8x2.5" NVMe Backplane option Kit</li> <li>3. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>4. <b>4X97A80399</b>, ThinkSystem SR665 2.5" Chassis Front BP1+2 16x NVMe System+Adapter Cable Kit v2 or <b>4X97A59781</b>, ThinkSystem SR665 2.5" Chassis Front BP1+2 16x NVMe System+Adapter Cable Kit</li> </ol>   |
| R   | 8          | 8        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>3. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>4. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>5. <b>4X97A80394</b>, ThinkSystem SR665 2.5" Chassis Front BP2 NVMe Cable Kit v2 or <b>4X97A59776</b>, ThinkSystem SR665 2.5" Chassis Front BP2 NVMe Cable Kit</li> </ol>  |
| S   | 16         | 8        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>4. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>5. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>6. <b>4X97A80395</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit v2 or <b>4X97A59777</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit</li> <li>7. <b>4X97A80396</b>, ThinkSystem SR665 2.5" Chassis Front BP3 NVMe Cable Kit v2 or <b>4X97A59778</b>, ThinkSystem SR665 2.5" Chassis Front BP3 NVMe Cable Kit</li> </ol> |

| Cfg               | Front bays |          |           | Mid bays |           | Rear     | Backplane and cable kits required (all required)   |
|-------------------|------------|----------|-----------|----------|-----------|----------|--|
|                   | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 2.5" | NVMe 2.5" | S/S 2.5" |  |
| T                 | 16         | 8        | 0         | 0        | 0         | 4        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>2. <b>4XH7A60930</b>, ThinkSystem SR650 V2/SR665 8x2.5" SAS/SATA Backplane Option Kit</li> <li>3. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>4. <b>4XH7A60938</b>, ThinkSystem SR650 V2/SR665 Rear 4x2.5" SAS/SATA Backplane Option Kit</li> <li>5. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> <li>6. <b>4X97A80393</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit v2 or <b>4X97A59775</b>, ThinkSystem SR665 2.5" Chassis Front BP2 SAS/SATA Cable Kit</li> <li>7. <b>4X97A80395</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit v2 or <b>4X97A59777</b>, ThinkSystem SR665 2.5" Chassis Front BP3 SAS/SATA Cable Kit</li> <li>8. <b>4X97A80396</b>, ThinkSystem SR665 2.5" Chassis Front BP3 NVMe Cable Kit v2 or <b>4X97A59778</b>, ThinkSystem SR665 2.5" Chassis Front BP3 NVMe Cable Kit</li> <li>9. <b>4X97A80397</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit v2 or <b>4X97A59779</b>, ThinkSystem SR665 2.5" Chassis Rear Backplane SAS/SATA Cable Kit</li> </ol> |
| Z (standard RAID) | 0          | 8        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>2. <b>4X97A80391</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit v2 or <b>4X97A59773</b>, ThinkSystem SR665 2.5" Chassis Front BP1 SAS/SATA Cable Kit</li> </ol>   |
| Z (Internal RAID) | 0          | 8        | 0         | 0        | 0         | 0        | <ol style="list-style-type: none"> <li>1. <b>4XH7A60934</b>, ThinkSystem SR665 8x2.5" AnyBay Backplane Option Kit</li> <li>2. <b>4X97A59856</b>, ThinkSystem SR665 Internal HBA/RAID Adapter Cable Kit for Single-CPU system</li> </ol>  |

If you have an existing configuration with an HBA or RAID adapter installed in one of the rear PCIe slots, and you wish to upgrade to one of the internal storage adapters (RAID 940-16i 8GB Flash PCIe Gen4 12Gb Internal Adapter or 440-16i SAS/SATA PCIe Gen4 12Gb Internal HBA) you will need to order an additional cable kit as listed in the following table.

Table 26. Cable kit when upgrading to an Internal HBA/RAID adapter

| Part number | Description  |
|-------------|--|
| 4X97A80390  | ThinkSystem SR665 Internal Raid Adapter Input Cable Kit v2 |
| 4X97A59772  | ThinkSystem SR665 Internal RAID Adapter Input Cable Kit    |

When adding drive bays, you will also need to add the appropriate storage controller(s). Consult the tables in the [Controller selections](#) section to determine what controller sections are supported and what additional controllers you will need. Controllers are described in the [Controllers for internal storage](#) section.

### RAID flash power module (supercap) support

If you plan to add one of the RAID adapters that includes a RAID flash power module (supercap) as a field upgrade, then you may also need to order a Supercap installation kit for the supercap, depending on the location where the supercap will be installed. For CTO orders, the components needed are automatically derived when you select the RAID adapter.

The adapters that this applies to are as follows:

- ThinkSystem RAID 930-8i 2GB Flash PCIe 12Gb Adapter
- ThinkSystem RAID 930-16i 4GB Flash PCIe 12Gb Adapter
- ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter
- ThinkSystem RAID 940-8i 8GB Flash PCIe Gen4 12Gb Adapter
- ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter
- ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Internal Adapter

The location of the supercaps depends on the mid-chassis drive cage used in the server, as shown in the following table.

Table 27. Supercap support

| Mid drive cage    | Supercaps supported | Location of supercaps                          | Supercap holder   |
|-------------------|---------------------|--|---|
| No mid drive cage | 4                   | Mounted on the air baffle                      | Not needed  |
| 2.5-inch drives   | 2                   | Mounted on the left side of the mid drive cage | Included with mid drive cage                              |
| 3.5-inch drives   | 2                   | Mounted under the system fan cage              | Order separately for field upgrades (see following table) |

When adding a RAID 930 or 940 adapter as a field upgrade to a configuration with 3.5-inch mid drive bays, order one supercap holder. Ordering information is in the following table.

Table 28. Supercap holder for 3.5-inch mid drive bay config

| Part number | Feature | Description                        | Maximum supported     |
|-------------|---------|------------------------------------|-----------------------|
| 4M17A61230  | B8MQ    | ThinkSystem 2U Supercap Holder Kit | 1 (holds 2 supercaps) |

## M.2 drives

The SR665 supports one or two M.2 form-factor SATA or NVMe drives for use as an operating system boot solution or as additional storage.

The M.2 drives install into an M.2 module which is mounted horizontally in the server:

- In servers without mid-chassis drives, the M.2 module is mounted on the air baffle
- With a mid-chassis drive cage (2.5-inch or 3.5-inch), the M.2 module is mounted on the drive cage, as shown in the [Mid drive bays](#) section.

There are three different M.2 modules supported, as listed in the following table.

Table 29. M.2 modules

| Part number | Feature code | Description                                    | SATA drives | NVMe drives | RAID | Maximum supported |
|-------------|--------------|--|-------------|-------------|------|-------------------|
| 4Y37A09739  | B5XH         | ThinkSystem M.2 SATA 2-Bay RAID Enablement Kit | Yes         | No          | Yes  | 1                 |
| 4Y37A09750  | B8P9         | ThinkSystem M.2 NVMe 2-Bay RAID Enablement Kit | No          | Yes         | Yes  | 1                 |
| 4Y37A09738  | B5XJ         | ThinkSystem M.2 SATA/NVMe 2-Bay Enablement Kit | Yes         | Yes         | No   | 1                 |

Supported drives are listed in the [Internal drive options](#) section.

The M.2 SATA 2-Bay RAID Enablement Kit has the following features:

- Supports one or two SATA M.2 drives
- Support 42mm, 60mm, 80mm and 110mm drive form factors (2242, 2260, 2280 and 22110)
- RAID support via an onboard Marvell 88SE9230 SATA RAID Controller
- Support JBOD, RAID-0 and RAID-1 (RAID support requires two M.2 drives)
- PCIe 2.0 x2 host interface; 6Gbps SATA connection to the drives
- Management and configuration support via UEFI and OS-based tools
- Supports monitoring and reporting of events and temperature through I2C
- Firmware update via Lenovo firmware update tools

The M.2 NVMe 2-Bay RAID Enablement Kit has the following features:

- Supports one or two NVMe M.2 drives
- Support 42mm, 60mm, 80mm and 110mm drive form factors (2242, 2260, 2280 and 22110)
- RAID support via an onboard Marvell 88NR2241 NVMe RAID Controller
- With 1 drive, supports single-drive RAID-0
- With 2 drives, supports 2-drive RAID-0, 2-drive RAID-1, or two single-drive RAID-0 arrays
- PCIe 3.0 x2 host interface; PCIe 3.0 x1 connection to each drive
- Management and configuration support via UEFI and OS-based tools
- Supports monitoring and reporting of events and temperature through I2C
- Firmware update via Lenovo firmware update tools

The M.2 SATA/NVMe 2-Bay Enablement Kit has the following features:

- Supports one or two M.2 drives, either SATA or NVMe
- When two drives installed, they must be either both SATA or both NVMe
- Support 42mm, 60mm, 80mm and 110mm drive form factors (2242, 2260, 2280 and 22110)
- JBOD support only; no RAID support
- Either 6Gbps SATA or PCIe 3.0 x1 interface to the drives depending on the drives installed
- Supports monitoring and reporting of events and temperature through I2C
- Firmware update via Lenovo firmware update tools

For field upgrades, the SR665 also requires an additional M.2 cable kit. Ordering information is listed in the following table.

Table 30. M.2 Cable for field upgrades

| Part number | Description   |
|-------------|---|
| 4X97A59825  | ThinkSystem SR650 V2/SR665 M.2 Cable Kit <ul style="list-style-type: none"><li>• 330mm signal cable</li></ul> |

For further details about M.2 components, see the *ThinkSystem M.2 Drives and M.2 Adapters* product guide:

<https://lenovopress.com/lp0769-thinksystem-m2-drives-adapters>



## 7mm drives

The SR665 supports two 7mm drives, either both SATA or both NVMe, at the rear of the server. These drives go in place of either PCIe slot 3 or PCIe slot 6 as shown in the following figure.

**Connected to CPU 2:** The 7mm drives are connected to CPU 2 regardless of which slot the drives are physically installed in.

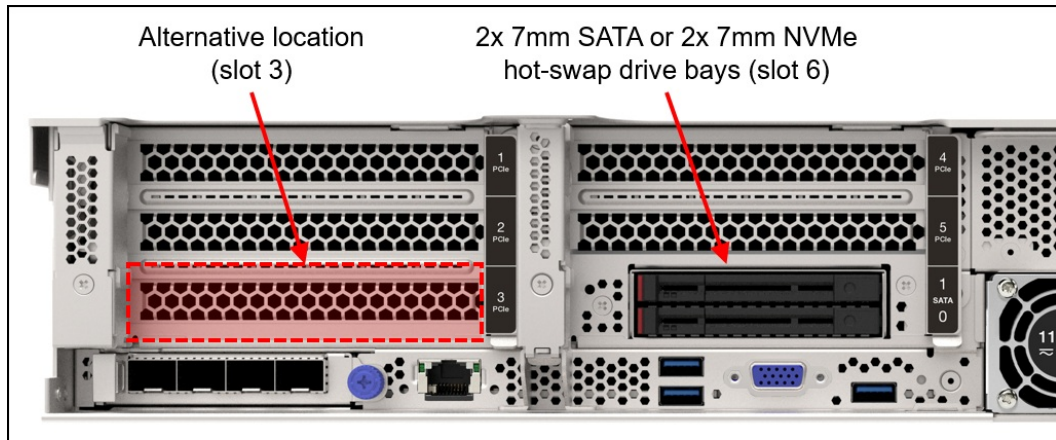


Figure 12. 7mm drive bays

For CTO orders, use the ordering information in the following table for the 7mm drive bays. In the DCSC configurator, you specify which PCIe riser the 7mm drives should be installed in (Riser 1 for slot 3 or Riser 2 for slot 6) by specifying riser feature code B8LQ either for Riser 1 or for Riser 2.

**Tip for 4x 3.5-inch rear drives:** If you wish to configure 4x 3.5-inch rear drives plus 7mm drives in a CTO configuration (Config D in [Supported drive bay combinations](#)), the 7mm drives will install in slot 6. You should specify riser card B8LS for Riser 1 and then leave Riser 2 without a riser selected.

Table 31. 7mm rear drive bays (CTO)

| Feature code  | Description  | Maximum supported |
|---|--|-------------------|
| 7mm drive bays  |  |                   |
| B8P2  | ThinkSystem 2U 7mm Drive Kit w/ SATA RAID              | 1                 |
| B8P3  | ThinkSystem 2U 7mm Drive Kit w/ NVMe RAID              | 1                 |
| Riser needed for 7mm drive support (used in Riser 1 or Riser 2) |  |                   |
| B8LQ  | ThinkSystem 2U PCIe Gen4 x16/x16 Slot 1&2 Riser 1 or 2 | 1                 |

For field upgrades, using the following ordering information. The kits include two cages for use depending on your PCIe slot configuration. The cages are for either Riser 1 or Riser 2.

Table 32. 7mm rear drive bays (field upgrades)

| Part number | Description   |
|-------------|---|
| 4XH7A60927  | ThinkSystem SR665 Rear 2x7mm SATA RAID Enablement Kit <ul style="list-style-type: none"> <li>• 2-bay SATA RAID hot-swap drive enclosure</li> <li>• 2FH+7mm SSD Riser Cage (with 2 FH slots)</li> <li>• 7mm SSD Riser Cage (without slots)</li> <li>• 2x 7mm drive bay fillers</li> <li>• Signal and power cables</li> </ul> |
| 4XH7A60928  | ThinkSystem SR665 Rear 2x7mm NVMe RAID Enablement Kit <ul style="list-style-type: none"> <li>• 2-bay NVMe RAID hot-swap drive enclosure</li> <li>• 2FH+7mm SSD Riser Cage (with 2 FH slots)</li> <li>• 7mm SSD Riser Cage (without slots)</li> <li>• 2x 7mm drive bay fillers</li> <li>• Signal and power cables</li> </ul> |

Each drive enclosure includes an integrated controller providing RAID functions.

The 7mm SATA RAID Drive Kit has the following features:

- Supports 1 or 2 SATA hot-swap drives; drives are 7mm high and 2.5-inches wide
- Integrated controller based on the Marvell 88SE9230 SATA RAID Controller
- PCIe 2.0 x2 host interface to the server system board
- Provides 6 Gbps SATA connectivity to the drives
- Supports JBOD, RAID-0 and RAID-1
- Management and configuration support via UEFI and OS-based tools
- Supports monitoring and reporting of events and temperature through I2C
- Firmware update via Lenovo firmware update tools

The 7mm NVMe RAID Drive Kit has the following features:

- Supports 1 or 2 NVMe hot-swap drives; drives are 7mm high and 2.5-inches wide
- Integrated controller based on the Marvell 88NR2241 NVMe RAID Controller
- PCIe 3.0 x2 host interface to the server system board
- Provides PCIe 3.0 x1 connectivity to each drive
- Supports RAID-0 and RAID-1 (JBOD is not supported)
- Management and configuration support via UEFI and OS-based tools
- Supports monitoring and reporting of events and temperature through I2C
- Firmware update via Lenovo firmware update tools

The following figure shows the 7mm NVMe RAID Drive enclosure installed in the 2FH+7mm SSD Riser Cage.



Figure 13. 7mm NVMe RAID Drive enclosure installed in the 2FH+7mm SSD Riser Cage

### SED encryption key management with ISKLM

The server supports self-encrypting drives (SEDs) as listed in the [Internal drive options](#) section. To effectively manage a large deployment of these drives in Lenovo servers, IBM Security Key Lifecycle Manager (SKLM) offers a centralized key management solution. A Lenovo Feature on Demand (FoD) upgrade is used to enable this SKLM support in the management processor of the server.

The following table lists the part numbers and feature codes for the upgrades.

Table 33. FoD upgrades for SKLM support

| Part number   | Feature code | Description  |
|---|--------------|--|
| Security Key Lifecycle Manager - FoD (United States, Canada, Asia Pacific, and Japan) |              |  |
| 00D9998   | A5U1         | SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 1 year S&S |
| 00D9999   | AS6C         | SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 3 year S&S |
| Security Key Lifecycle Manager - FoD (Latin America, Europe, Middle East, and Africa) |              |  |
| 00FP648   | A5U1         | SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 1 year S&S |
| 00FP649   | AS6C         | SKLM for System x/ThinkSystem w/SEDs - FoD per Install with 3 year S&S |

The IBM Security Key Lifecycle Manager software is available from Lenovo using the ordering information listed in the following table.

Table 34. IBM Security Key Lifecycle Manager licenses

| <b>Part number</b> | <b>Description</b>   |
|--------------------|--|
| 7S0A007FWW         | IBM Security Key Lifecycle Manager Basic Edition Install License + SW Subscription & Support 12 Months                                   |
| 7S0A007HWW         | IBM Security Key Lifecycle Manager For Raw Decimal Terabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months    |
| 7S0A007KWW         | IBM Security Key Lifecycle Manager For Raw Decimal Petabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months    |
| 7S0A007MWW         | IBM Security Key Lifecycle Manager For Usable Decimal Terabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months |
| 7S0A007PWW         | IBM Security Key Lifecycle Manager For Usable Decimal Petabyte Storage Resource Value Unit License + SW Subscription & Support 12 Months |

## Controllers for internal storage

The SR665 offers a variety of controller options for internal drives:

- For 2.5-inch and 3.5-inch drives:
  - Onboard SATA ports (feature AVUX)
  - Onboard NVMe ports (feature BC4V)
  - NVMe switch and retimer adapters (PCIe slot-based)
  - RAID adapters and HBAs for SAS/SATA drives (PCIe slot-based)
  - RAID adapters, SAS Expander, and HBAs for SAS/SATA drives (cabled in a dedicated space)
- For 7mm drive bays in the rear of the server (see the [7mm drives](#) section)
  - SATA controller integrated into the 7mm drive bay enclosure
  - NVMe controller integrated into the 7mm drive bay enclosure
- For M.2 drives internal to the server (see [M.2 drives](#) section)
  - SATA controller integrated on the M.2 SATA 2-Bay RAID Enablement Kit
  - NVMe controller integrated on the M.2 NVMe 2-Bay RAID Enablement Kit

As well as supporting RAID adapters and HBAs that install in a PCIe slot, the SR665 with 2.5-inch front drive bays supports a custom adapter that is mounted in the server and cabled to one of the onboard NVMe ports. The HBA 440-16i Internal Adapter and RAID 940-16i Internal Adapter are mounted behind the front 2.5-inch drive bays, as shown in the following figure. These Internal Adapters are not supported with 3.5-inch front drives due to a lack of physical space.

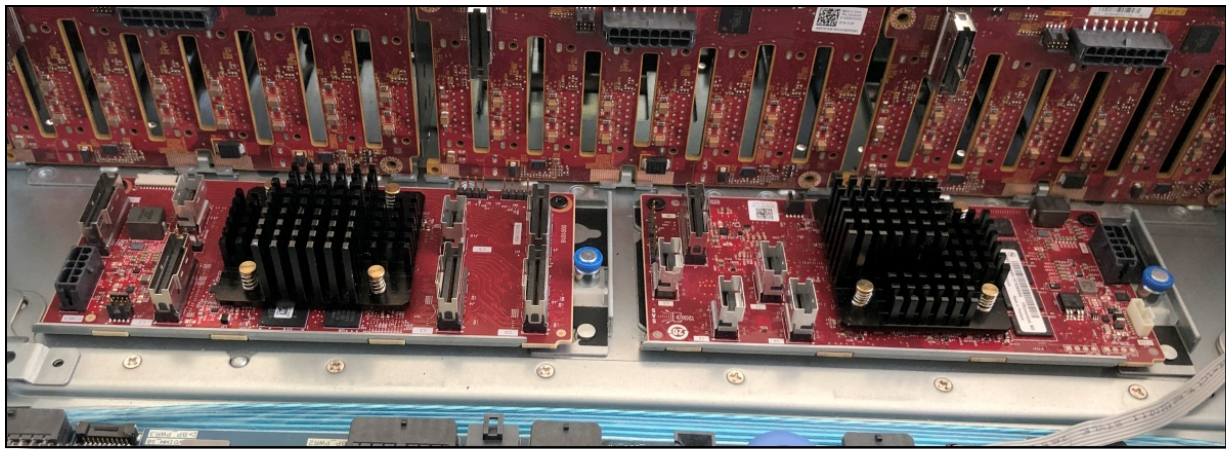


Figure 14. ThinkSystem 12Gb Internal Expander (left) and ThinkSystem RAID 940-16i Internal Adapter (right) installed in the ThinkSystem SR665 (cables and system fans removed for clarity)

The following table lists the adapters used for the internal storage of the server.

**Tip:** The ThinkSystem 48 port 12Gb Internal Expander used to be named the ThinkSystem 36i 12Gb Internal Expander.

Table 35. Internal Storage adapter support

| Part number         | Feature code | Description            | Power module (supercap) | Slots supported | Maximum supported |
|---------------------|--------------|------------------------|-------------------------|-----------------|-------------------|
| Onboard controllers |              |                        |                         |                 |                   |
| CTO only            | AVUX         | Onboard SATA AHCI Mode | No                      | N/A             | 1                 |

| Part number                              | Feature code | Description  | Power module (supercap) | Slots supported | Maximum supported |
|--|--------------|--|-------------------------|-----------------|-------------------|
| CTO only                                 | BC4V         | Non RAID NVMe (Onboard NVMe)                                       | No                      | N/A             | 1                 |
| <b>SAS/SATA RAID - PCIe 3.0 adapters</b> |              |  |                         |                 |                   |
| 7Y37A01082                               | AUNG         | ThinkSystem RAID 530-8i PCIe 12Gb Adapter                          | No                      | All rear slots  | 4                 |
| 4Y37A09727                               | BFY5         | ThinkSystem RAID 530-16i PCIe 12Gb Adapter                         | No                      | All rear slots  | 1                 |
| 4Y37A72482                               | BJHK         | ThinkSystem RAID 5350-8i PCIe 12Gb Adapter                         | No                      | All rear slots  | 4                 |
| 7Y37A01084                               | AUNJ         | ThinkSystem RAID 930-8i 2GB Flash PCIe 12Gb Adapter                | Included                | All rear slots  | 4                 |
| 7Y37A01085                               | AUNK         | ThinkSystem RAID 930-16i 4GB Flash PCIe 12Gb Adapter               | Included                | All rear slots  | 1                 |
| 4Y37A72483                               | BJHL         | ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter               | Included                | All rear slots  | 4                 |
| 4Y37A72485                               | BJHN         | ThinkSystem RAID 9350-16i 4GB Flash PCIe 12Gb Adapter              | Included                | All rear slots  | 1                 |
| <b>SAS/SATA RAID - PCIe 4.0 adapters</b> |              |  |                         |                 |                   |
| 4Y37A78834                               | BMFT         | ThinkSystem RAID 540-8i PCIe Gen4 12Gb Adapter                     | No                      | All rear slots  | 4                 |
| 4Y37A78835                               | BNAX         | ThinkSystem RAID 540-16i PCIe Gen4 12Gb Adapter                    | No                      | All rear slots  | 1                 |
| 4Y37A09728†                              | B8NY         | ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter           | Included                | All rear slots  | 4                 |
| 4Y37A09729†                              | B8NW         | ThinkSystem RAID 940-8i 8GB Flash PCIe Gen4 12Gb Adapter           | Included                | All rear slots  | 4                 |
| 4Y37A78600†                              | BM35         | ThinkSystem RAID 940-16i 4GB Flash PCIe Gen4 12Gb Adapter          | Included                | All rear slots  | 1                 |
| 4Y37A09735†                              | B8P0         | ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Internal Adapter | Included                | Internal        | 1*                |
| 4Y37A09730†                              | B8NZ         | ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter          | Included                | All rear slots  | 1                 |
| 4Y37A09733                               | B8P8         | ThinkSystem RAID 940-32i 8GB Flash PCIe Gen4 12Gb Adapter          | Included                | All rear slots  | 1                 |
| <b>SAS Expander</b>                      |              |  |                         |                 |                   |
| 4Y37A09736                               | B8P6         | ThinkSystem 48 port 12Gb Internal Expander                         | No                      | Internal        | 1                 |
| <b>SAS/SATA HBA - PCIe 3.0 adapters</b>  |              |  |                         |                 |                   |
| 7Y37A01088                               | AUNL         | ThinkSystem 430-8i SAS/SATA 12Gb HBA                               | No                      | All rear slots  | 2                 |
| 7Y37A01089                               | AUNM         | ThinkSystem 430-16i SAS/SATA 12Gb HBA                              | No                      | All rear slots  | 1                 |
| 4Y37A72480                               | BJHH         | ThinkSystem 4350-8i SAS/SATA 12Gb HBA                              | No                      | All rear slots  | 4                 |
| 4Y37A72481                               | BJHJ         | ThinkSystem 4350-16i SAS/SATA 12Gb HBA                             | No                      | All rear slots  | 1                 |
| <b>SAS/SATA HBA - PCIe 4.0 adapters</b>  |              |  |                         |                 |                   |
| 4Y37A09725                               | B8P1         | ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb Internal HBA           | No                      | Internal        | 1*                |

| Part number | Feature code | Description  | Power module (supercap) | Slots supported | Maximum supported |
|-------------|--------------|--|-------------------------|-----------------|-------------------|
| 4Y37A78601  | BM51         | ThinkSystem 440-8i SAS/SATA PCIe Gen4 12Gb HBA                             | No                      | All rear slots  | 2                 |
| 4Y37A78602  | BM50         | ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb HBA                            | No                      | All rear slots  | 1                 |
| NVMe        |              |  |                         |                 |                   |
| 4C57A65446  | B98C         | ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter                          | No                      | All rear slots  | 4                 |
| 4Y37A09764  | B4PA         | ThinkSystem 1610-8P NVMe Switch Adapter (PCIe Gen3 adapter‡)               | No                      | All rear slots  | 4                 |
| 4Y37A09737  | B8P5         | ThinkSystem 1611-8P PCIe Gen4 Switch Adapter                               | No                      | All rear slots  | 4                 |
| 4Y37A09728† | BGM1         | ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter for U.3           | Included                | All rear slots  | 2                 |
| 4Y37A09729† | BGM0         | ThinkSystem RAID 940-8i 8GB Flash PCIe Gen4 12Gb Adapter for U.3           | Included                | All rear slots  | 2                 |
| 4Y37A09735† | BGM2         | ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Internal Adapter for U.3 | Included                | Internal        | 1*                |
| 4Y37A78600† | BM36         | ThinkSystem RAID 940-16i 4GB Flash PCIe Gen4 12Gb Adapter for U.3          | Included                | All rear slots  | 1                 |
| 4Y37A09730† | BDY4         | ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter for U.3          | Included                | All rear slots  | 1                 |

\* Only supported with 2.5-inch front drive bays. Not supported in configurations with 3.5-inch front drive bays.

† Adapter also supports PCIe 4.0 x1 connectivity to NVMe drives (requires NVMe drives with U.3 interface)

‡ The 1610-8P NVMe Switch Adapter is a PCIe 3.0 adapter - this means all NVMe drives connected to it will operate at Gen 3 speed

Configuration notes:

- **Supercap support limits the number of RAID adapters installable** : The table lists whether the adapter includes a power module (supercap) to power the flash memory. The server supports between 1 and 4 supercaps depending on the server configuration as described in the [RAID flash power module \(supercap\) support](#) section. The number of supercaps supported also determines the maximum number of RAID adapters with flash that can be installed in the server.
- **Field upgrades**: If you are adding a RAID adapter with supercap to the server as a field upgrade, you may need a supercap holder as described in the [RAID flash power module \(supercap\) support](#) section.
- **7mm drive support**: The storage adapters listed in the table below do *not* provide connectivity to the 7mm drive bays that are optionally available at the rear of the server. The 7mm drives have their own independent RAID controller. See the [7mm drives](#) section for details.
- **RAID 530-8i firmware**: If you plan to use the RAID 530-8i in the server, it must have firmware 50.3.0-1032 or later applied before it can be used in the server. If the adapter you plan to use has older firmware (for example, you are using an adapter you previously purchased), it must first be upgraded by installing it in another server and upgrading the firmware there. For more information, see [Support tip HT509177](#).

The RAID 940-8i and RAID 940-16i adapters also support NVMe through a feature named Tri-Mode support (or Trimode support). This feature enables the use of NVMe U.3 drives at the same time as SAS and SATA drives. Cabling of the controller to the backplanes is the same as with SAS/SATA drives, and the NVMe drives are connected via a PCIe x1 link to the controller.

NVMe drives connected using Tri-Mode support provide better performance than SAS or SATA drives: A SATA SSD has a data rate of 6Gbps, a SAS SSD has a data rate of 12Gbps, whereas an NVMe U.3 Gen 4 SSD with a PCIe x1 link will have a data rate of 16Gbps. NVMe drives typically also have lower latency and higher IOPS compared to SAS and SATA drives. Tri-Mode is supported with U.3 NVMe drives in either 2.5-inch and 3.5-inch form factor and requires an AnyBay backplane.

**Tri-Mode requires U.3 drives:** Only NVMe drives with a U.3 interface are supported. U.2 drives are not supported. See the [Internal drive options](#) section for the U.3 drives supported by the server.

The onboard SATA controller has the following features:

- Controller integrated into the AMD processor
- JBOD only; no RAID support
- Supports up to 12 SATA drives in the SR665
- Supports HDDs and SSDs; can be mixed

For specifications about the RAID adapters and HBAs supported by the SR665, see the ThinkSystem RAID Adapter and HBA Reference, available from:

<https://lenovopress.com/lp1288-lenovo-thinksystem-raid-adapter-and-hba-reference#sr665-support=SR665>

For more information about each of the adapters, see the product guides in the RAID adapters or HBA sections of the Lenovo Press web site:

<https://lenovopress.com/servers/options/raid>

<https://lenovopress.com/servers/options/hba>

## Internal drive options

The following tables list the drive options for internal storage of the server.

2.5-inch hot-swap drives:

- [2.5-inch hot-swap 12 Gb SAS HDDs](#)
- [2.5-inch hot-swap 6 Gb SATA HDDs](#)
- [2.5-inch hot-swap 12 Gb SAS SSDs](#)
- [2.5-inch hot-swap 6 Gb SATA SSDs](#)
- [2.5-inch hot-swap PCIe 4.0 NVMe SSDs](#)
- [2.5-inch hot-swap PCIe 3.0 NVMe SSDs](#)

2.5-inch 7mm hot-swap drives:

- [7mm 2.5-inch hot-swap 6 Gb SATA SSDs](#)
- [7mm 2.5-inch hot-swap PCIe 3.0 NVMe SSDs](#)

3.5-inch hot-swap drives:

- [3.5-inch hot-swap 12 Gb SAS HDDs](#)
- [3.5-inch hot-swap 6 Gb SATA HDDs](#)
- [3.5-inch hot-swap 12 Gb SAS SSDs](#)
- [3.5-inch hot-swap 6 Gb SATA SSDs](#)
- [3.5-inch hot-swap PCIe 4.0 NVMe SSDs](#)
- [3.5-inch hot-swap PCIe 3.0 NVMe SSDs](#)



M.2 drives:

- [M.2 SATA drives](#)
- [M.2 NVMe drives](#)

**M.2 drive support:** The use of M.2 drives requires an additional adapter as described in the [M.2 drives](#) subsection.

Table 36. 2.5-inch hot-swap 12 Gb SAS HDDs

| Part number                                | Feature | Description  | Maximum supported |
|--|---------|--|-------------------|
| 2.5-inch hot-swap HDDs - 12 Gb SAS 10K     |         |  |                   |
| 7XB7A00024                                 | AULY    | ThinkSystem 2.5" 300GB 10K SAS 12Gb Hot Swap 512n HDD      | 40                |
| 7XB7A00025                                 | AULZ    | ThinkSystem 2.5" 600GB 10K SAS 12Gb Hot Swap 512n HDD      | 40                |
| 7XB7A00027                                 | AUM1    | ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD      | 40                |
| 7XB7A00028                                 | AUM2    | ThinkSystem 2.5" 1.8TB 10K SAS 12Gb Hot Swap 512e HDD      | 40                |
| 7XB7A00069                                 | B0YS    | ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD      | 40                |
| 2.5-inch hot-swap HDDs - 12 Gb SAS 15K     |         |  |                   |
| 7XB7A00021                                 | AULV    | ThinkSystem 2.5" 300GB 15K SAS 12Gb Hot Swap 512n HDD      | 40                |
| 7XB7A00022                                 | AULW    | ThinkSystem 2.5" 600GB 15K SAS 12Gb Hot Swap 512n HDD      | 40                |
| 7XB7A00023                                 | AULX    | ThinkSystem 2.5" 900GB 15K SAS 12Gb Hot Swap 512e HDD      | 40                |
| 2.5-inch hot-swap HDDs - 12 Gb NL SAS      |         |  |                   |
| 7XB7A00034                                 | AUM6    | ThinkSystem 2.5" 1TB 7.2K SAS 12Gb Hot Swap 512n HDD       | 40                |
| 7XB7A00035                                 | AUM7    | ThinkSystem 2.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD       | 40                |
| 2.5-inch hot-swap SED HDDs - 12 Gb SAS 10K |         |  |                   |
| 7XB7A00031                                 | AUM5    | ThinkSystem 2.5" 600GB 10K SAS 12Gb Hot Swap 512n HDD SED  | 40                |
| 7XB7A00033                                 | B0YX    | ThinkSystem 2.5" 1.2TB 10K SAS 12Gb Hot Swap 512n HDD SED  | 40                |
| 7XB7A00070                                 | B0YV    | ThinkSystem 2.5" 2.4TB 10K SAS 12Gb Hot Swap 512e HDD FIPS | 40                |

Table 37. 2.5-inch hot-swap 6 Gb SATA HDDs

| Part number                           | Feature | Description  | Maximum supported |
|---------------------------------------|---------|--|-------------------|
| 2.5-inch hot-swap HDDs - 6 Gb NL SATA |         |  |                   |
| 7XB7A00036                            | AUUE    | ThinkSystem 2.5" 1TB 7.2K SATA 6Gb Hot Swap 512n HDD | 40                |
| 7XB7A00037                            | AUUJ    | ThinkSystem 2.5" 2TB 7.2K SATA 6Gb Hot Swap 512e HDD | 40                |

Table 38. 2.5-inch hot-swap 12 Gb SAS SSDs

| Part number  | Feature | Description   | Maximum supported |
|--|---------|---|-------------------|
| <b>2.5-inch hot-swap SSDs - 12 Gb SAS - Write Intensive/Performance (10+ DWPD)</b>     |         |   |                   |
| 4XB7A70006   | BG07    | ThinkSystem 2.5" Nytro 3732 400GB Performance SAS 12Gb Hot Swap SSD     | 40                |
| 4XB7A70005   | BG06    | ThinkSystem 2.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD     | 40                |
| 4XB7A70004   | BG05    | ThinkSystem 2.5" Nytro 3732 1.6TB Performance SAS 12Gb Hot Swap SSD     | 40                |
| 4XB7A70003   | BG04    | ThinkSystem 2.5" Nytro 3732 3.2TB Performance SAS 12Gb Hot Swap SSD     | 40                |
| <b>2.5-inch hot-swap SSDs - 12 Gb SAS - Mixed Use/Mainstream (3-5 DWPD)</b>            |         |   |                   |
| 4XB7A17062   | B8HU    | ThinkSystem 2.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD         | 40                |
| 4XB7A17063   | B8J4    | ThinkSystem 2.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD         | 40                |
| 4XB7A17064   | B8JD    | ThinkSystem 2.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD         | 40                |
| 4XB7A17065   | B8JA    | ThinkSystem 2.5" PM1645a 6.4TB Mainstream SAS 12Gb Hot Swap SSD         | 40                |
| <b>2.5-inch hot-swap SSDs - 12 Gb SAS - Read Intensive/Entry/Capacity (&lt;3 DWPD)</b> |         |   |                   |
| 4XB7A38175   | B91A    | ThinkSystem 2.5" PM1643a 960GB Entry SAS 12Gb Hot Swap SSD              | 40                |
| 4XB7A38176   | B91B    | ThinkSystem 2.5" PM1643a 1.92TB Entry SAS 12Gb Hot Swap SSD             | 40                |
| 4XB7A17054   | B91C    | ThinkSystem 2.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD             | 40                |
| 4XB7A17055   | B91D    | ThinkSystem 2.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap SSD             | 40                |
| 4XB7A17056   | BC4R    | ThinkSystem 2.5" PM1643a 15.36TB Entry SAS 12Gb Hot Swap SSD            | 40                |
| <b>2.5-inch hot-swap SED SSDs - 12 Gb SAS - Write Intensive/Performance (10+ DWPD)</b> |         |   |                   |
| 4XB7A70007   | BFZZ    | ThinkSystem 2.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD SED | 40                |

Table 39. 2.5-inch hot-swap 6 Gb SATA SSDs

| Part number   | Feature | Description   | Maximum supported |
|---|---------|---|-------------------|
| <b>2.5-inch hot-swap SSDs - 6 Gb SATA - Mixed Use/Mainstream (3-5 DWPD)</b> |         |   |                   |
| 4XB7A17125  | BA7Q    | ThinkSystem 2.5" S4620 480GB Mixed Use SATA 6Gb HS SSD        | 40                |
| 4XB7A17126  | BA4T    | ThinkSystem 2.5" S4620 960GB Mixed Use SATA 6Gb HS SSD        | 40                |
| 4XB7A17127  | BA4U    | ThinkSystem 2.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD       | 40                |
| 4XB7A17128  | BK7L    | ThinkSystem 2.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD       | 40                |
| 4XB7A17087  | B8J1    | ThinkSystem 2.5" 5300 240GB Mainstream SATA 6Gb Hot Swap SSD  | 40                |
| 4XB7A17088  | B8HY    | ThinkSystem 2.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD  | 40                |
| 4XB7A17089  | B8J6    | ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD  | 40                |
| 4XB7A17090  | B8JE    | ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD | 40                |
| 4XB7A17091  | B8J7    | ThinkSystem 2.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD | 40                |
| 4XB7A13633  | B49L    | ThinkSystem 2.5" S4610 240GB Mixed Use SATA 6Gb HS SSD        | 40                |
| 4XB7A13634  | B49M    | ThinkSystem 2.5" S4610 480GB Mixed Use SATA 6Gb HS SSD        | 40                |
| 4XB7A13635  | B49N    | ThinkSystem 2.5" S4610 960GB Mixed Use SATA 6Gb HS SSD        | 40                |

| Part number  | Feature | Description   | Maximum supported |
|--|---------|---|-------------------|
| 4XB7A13636   | B49P    | ThinkSystem 2.5" S4610 1.92TB Mixed Use SATA 6Gb HS SSD           | 40                |
| 4XB7A13637   | B49Q    | ThinkSystem 2.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD           | 40                |
| 2.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)      |         |   |                   |
| 4XB7A72438   | BM8B    | ThinkSystem 2.5" PM893 480GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A72439   | BM8A    | ThinkSystem 2.5" PM893 960GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A72440   | BM89    | ThinkSystem 2.5" PM893 1.92TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 4XB7A72441   | BM88    | ThinkSystem 2.5" PM893 3.84TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 4XB7A72442   | BM87    | ThinkSystem 2.5" PM893 7.68TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 4XB7A17072   | B99D    | ThinkSystem 2.5" S4520 240GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A17101   | BA7G    | ThinkSystem 2.5" S4520 480GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A17102   | BA7H    | ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A17103   | BA7J    | ThinkSystem 2.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 4XB7A17104   | BK77    | ThinkSystem 2.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 4XB7A17105   | BK78    | ThinkSystem 2.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 4XB7A38271   | BCTC    | ThinkSystem 2.5" Multi Vendor 240GB Entry SATA 6Gb Hot Swap SSD   | 40                |
| 4XB7A38272   | BCTD    | ThinkSystem 2.5" Multi Vendor 480GB Entry SATA 6Gb Hot Swap SSD   | 40                |
| 4XB7A38273   | BCTE    | ThinkSystem 2.5" Multi Vendor 960GB Entry SATA 6Gb Hot Swap SSD   | 40                |
| 4XB7A38274   | BCTF    | ThinkSystem 2.5" Multi Vendor 1.92TB Entry SATA 6Gb Hot Swap SSD  | 40                |
| 4XB7A38275   | BCTG    | ThinkSystem 2.5" Multi Vendor 3.84TB Entry SATA 6Gb Hot Swap SSD  | 40                |
| 4XB7A17075   | B8HV    | ThinkSystem 2.5" 5300 240GB Entry SATA 6Gb Hot Swap SSD           | 40                |
| 4XB7A17076   | B8JM    | ThinkSystem 2.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD           | 40                |
| 4XB7A17077   | B8HP    | ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD           | 40                |
| 4XB7A17078   | B8J5    | ThinkSystem 2.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD          | 40                |
| 4XB7A17079   | B8JP    | ThinkSystem 2.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD          | 40                |
| 4XB7A17080   | B8J2    | ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD          | 40                |
| 4XB7A38185   | B9AC    | ThinkSystem 2.5" 5210 960GB Entry SATA 6Gb Hot Swap QLC SSD       | 40                |
| 4XB7A38144   | B7EW    | ThinkSystem 2.5" 5210 1.92TB Entry SATA 6Gb Hot Swap QLC SSD      | 40                |
| 4XB7A38145   | B7EX    | ThinkSystem 2.5" 5210 3.84TB Entry SATA 6Gb Hot Swap QLC SSD      | 40                |
| 4XB7A38146   | B7EY    | ThinkSystem 2.5" 5210 7.68TB Entry SATA 6Gb Hot Swap QLC SSD      | 40                |
| 4XB7A10247   | B498    | ThinkSystem 2.5" S4510 240GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A10248   | B499    | ThinkSystem 2.5" S4510 480GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A10249   | B49A    | ThinkSystem 2.5" S4510 960GB Read Intensive SATA 6Gb HS SSD       | 40                |
| 4XB7A13622   | B49B    | ThinkSystem 2.5" S4510 1.92TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 4XB7A13623   | B49C    | ThinkSystem 2.5" S4510 3.84TB Read Intensive SATA 6Gb HS SSD      | 40                |
| 2.5-inch hot-swap SED SSDs - 6 Gb SATA - Mixed Use/Mainstream (3-5 DWPD) |         |   |                   |
| 4XB7A13972   | BNEW    | ThinkSystem 2.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD SED  | 40                |
| 4XB7A38193   | B93K    | ThinkSystem 2.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD SED | 40                |
| 4XB7A64222   | BEMB    | ThinkSystem 2.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD SED | 40                |
| 2.5-inch hot-swap SED SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD)  |         |   |                   |
| 4XB7A38141   | BE29    | ThinkSystem 2.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD SED       | 40                |

| <b>Part number</b> | <b>Feature</b> | <b>Description</b>   | <b>Maximum supported</b> |
|--------------------|----------------|--|--------------------------|
| 4XB7A38191         | B93L           | ThinkSystem 2.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD SED | 40                       |
| 4XB7A38192         | B93M           | ThinkSystem 2.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD SED | 40                       |

Table 40. 2.5-inch hot-swap PCIe 4.0 NVMe SSDs

| Part number  | Feature | Description   | Maximum supported |
|--|---------|---|-------------------|
| <b>2.5-inch SSDs - U.2 PCIe 4.0 NVMe - Mixed Use/Mainstream (3-5 DWPD)</b>       |         |   |                   |
| 4XB7A17152   | BCFV    | ThinkSystem 2.5" U.2 P5600 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD          | 32                |
| 4XB7A17153   | BCFR    | ThinkSystem 2.5" U.2 P5600 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD          | 32                |
| 4XB7A17154   | BCFS    | ThinkSystem 2.5" U.2 P5600 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD          | 32                |
| <b>2.5-inch SSDs - U.3 PCIe 4.0 NVMe - Mixed Use/Mainstream (3-5 DWPD)</b>       |         |   |                   |
| 4XB7A64175   | BE03    | ThinkSystem U.3 Kioxia CM6-V 800GB Mainstream NVMe PCIe 4.0 x4 Hot Swap SSD | 32*               |
| 4XB7A17112   | B96Z    | ThinkSystem U.3 Kioxia CM6-V 1.6TB Mainstream NVMe PCIe4.0 x4 Hot Swap SSD  | 32*               |
| 4XB7A17113   | B96T    | ThinkSystem U.3 Kioxia CM6-V 3.2TB Mainstream NVMe PCIe4.0 x4 Hot Swap SSD  | 32*               |
| 4XB7A17114   | B96P    | ThinkSystem U.3 Kioxia CM6-V 6.4TB Mainstream NVMe PCIe4.0 x4 Hot Swap SSD  | 32*               |
| <b>2.5-inch SSDs - U.2 PCIe 4.0 NVMe - Read Intensive/Entry (&lt;3 DWPD)</b>     |         |   |                   |
| 4XB7A79697   | BNM6    | ThinkSystem 2.5" U.2 PM9A3 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD    | 32                |
| 4XB7A17145   | BCFT    | ThinkSystem 2.5" U.2 P5500 1.92TB Read Intensive NVMe PCIe 4.0 x4 HS SSD    | 32                |
| 4XB7A17146   | BCFW    | ThinkSystem 2.5" U.2 P5500 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD    | 32                |
| 4XB7A17147   | BCFU    | ThinkSystem 2.5" U.2 P5500 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD    | 32                |
| 4XB7A38196   | BC4Y    | ThinkSystem U.2 PM1733 1.92TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD           | 32                |
| 4XB7A38197   | BC4Z    | ThinkSystem U.2 PM1733 3.84TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD           | 32                |
| 4XB7A38283   | BE2E    | ThinkSystem U.2 PM1733 7.68TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD           | 32                |
| 4XB7A38284   | BE2F    | ThinkSystem U.2 PM1733 15.36TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD          | 32                |
| <b>2.5-inch SSDs - U.3 PCIe 4.0 NVMe - Read Intensive/Entry (&lt;3 DWPD)</b>     |         |   |                   |
| 4XB7A64141   | BE2G    | ThinkSystem U.3 Kioxia CM6-R 3.84TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD     | 32*               |
| 4XB7A64142   | BE2H    | ThinkSystem U.3 Kioxia CM6-R 7.68TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD     | 32*               |
| <b>2.5-inch SED SSDs - U.2 PCIe 4.0 NVMe - Read Intensive/Entry (&lt;3 DWPD)</b> |         |   |                   |
| 4XB7A38257   | BE2A    | ThinkSystem U.2 PM1733 3.84TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD SED       | 32                |
| 4XB7A38258   | BE2B    | ThinkSystem U.2 PM1733 7.68TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD SED       | 32                |
| <b>2.5-inch SED SSDs - U.3 PCIe 4.0 NVMe - Read Intensive/Entry (&lt;3 DWPD)</b> |         |   |                   |
| 4XB7A38269   | BE2C    | ThinkSystem U.3 Kioxia CM6-R 3.84TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD SED | 32*               |
| 4XB7A38270   | BE2D    | ThinkSystem U.3 Kioxia CM6-R 7.68TB Entry NVMe PCIe 4.0 x4 Hot Swap SSD SED | 32*               |

\* CM5 and CM6 drives are not supported with the ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter, 4C57A65446

Table 41. 2.5-inch hot-swap PCIe 3.0 NVMe SSDs

| Part number   | Feature | Description  | Maximum supported |
|---|---------|--|-------------------|
| 2.5-inch SSDs - U.2 PCIe 3.0 NVMe - Mixed Use/Mainstream (3-5 DWPD) |         |  |                   |
| 4XB7A13936  | B589    | ThinkSystem U.2 Intel P4610 1.6TB Mainstream NVMe PCIe3.0 x4 Hot Swap SSD    | 32                |
| 4XB7A08518  | B21Y    | ThinkSystem U.2 Toshiba CM5-V 3.2TB Mainstream NVMe PCIe 3.0 x4 Hot Swap SSD | 32*               |
| 2.5-inch SSDs - U.2 PCIe 3.0 NVMe - Read Intensive/Entry (<3 DWPD)  |         |  |                   |
| 4XB7A10204  | B58G    | ThinkSystem 2.5" U.2 P4510 2.0TB Read Intensive NVMe PCIe 3.0 x4 HS SSD      | 32                |
| 4XB7A10205  | B58H    | ThinkSystem U.2 Intel P4510 4.0TB Entry NVMe PCIe3.0 x4 Hot Swap SSD         | 32                |
| 4XB7A08513  | B58J    | ThinkSystem U.2 Intel P4510 8.0TB Entry NVMe PCIe3.0 x4 Hot Swap SSD         | 32                |
| 4XB7A10175  | B34N    | ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD             | 32                |
| 4XB7A10176  | B34P    | ThinkSystem U.2 PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD             | 32                |

\* CM5 and CM6 drives are not supported with the ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter, 4C57A65446

**Note:** NVMe PCIe SSDs support surprise hot removal and hot insertion, provided the operating system supports PCIe SSD hot-swap.

Table 42. 7mm 2.5-inch hot-swap 6 Gb SATA SSDs

| Part number   | Feature | Description  | Maximum supported |
|---|---------|--|-------------------|
| 7mm 2.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD) |         |  |                   |
| 4XB7A17106  | BK79    | ThinkSystem 7mm S4520 240GB Read Intensive SATA 6Gb HS SSD | 2                 |
| 4XB7A17107  | BK7A    | ThinkSystem 7mm S4520 480GB Read Intensive SATA 6Gb HS SSD | 2                 |
| 4XB7A17108  | BK7B    | ThinkSystem 7mm S4520 960GB Read Intensive SATA 6Gb HS SSD | 2                 |
| 4XB7A38181  | B8JQ    | ThinkSystem 7mm 5300 240GB Entry SATA 6Gb SSD              | 2                 |
| 4XB7A38182  | B8JT    | ThinkSystem 7mm 5300 480GB Entry SATA 6Gb SSD              | 2                 |
| 4XB7A38183  | B8JS    | ThinkSystem 7mm 5300 960GB Entry SATA 6Gb SSD              | 2                 |

Table 43. 7mm 2.5-inch hot-swap PCIe 3.0 NVMe SSDs

| Part number   | Feature | Description   | Maximum supported |
|---|---------|---|-------------------|
| 7mm 2.5-inch hot-swap SSDs - PCIe 3.0 NVMe - Read Intensive/Entry (<3 DWPD) |         |   |                   |
| 4XB7A38216  | BB63    | ThinkSystem 7mm PM983 960GB Entry NVMe PCIe 3.0 x4 Hot Swap SSD | 2                 |

**Note:** NVMe PCIe SSDs support surprise hot removal and hot insertion, provided the operating system supports PCIe SSD hot-swap.

Table 44. 3.5-inch hot-swap 12 Gb SAS HDDs

| Part number                                      | Feature | Description   | Maximum supported |
|--|---------|---|-------------------|
| <b>3.5-inch hot-swap HDDs - 12 Gb SAS 15K</b>    |         |   |                   |
| 7XB7A00038                                       | AUU2    | ThinkSystem 3.5" 300GB 15K SAS 12Gb Hot Swap 512n HDD     | 20                |
| 7XB7A00039                                       | AUU3    | ThinkSystem 3.5" 600GB 15K SAS 12Gb Hot Swap 512n HDD     | 20                |
| 7XB7A00040                                       | AUUC    | ThinkSystem 3.5" 900GB 15K SAS 12Gb Hot Swap 512e HDD     | 20                |
| <b>3.5-inch hot-swap HDDs - 12 Gb NL SAS</b>     |         |   |                   |
| 7XB7A00042                                       | AUU5    | ThinkSystem 3.5" 2TB 7.2K SAS 12Gb Hot Swap 512n HDD      | 20                |
| 7XB7A00043                                       | AUU6    | ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512n HDD      | 20                |
| 7XB7A00044                                       | AUU7    | ThinkSystem 3.5" 6TB 7.2K SAS 12Gb Hot Swap 512e HDD      | 20                |
| 7XB7A00045                                       | B0YR    | ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD      | 20                |
| 7XB7A00046                                       | AUUG    | ThinkSystem 3.5" 10TB 7.2K SAS 12Gb Hot Swap 512e HDD     | 20                |
| 7XB7A00067                                       | B117    | ThinkSystem 3.5" 12TB 7.2K SAS 12Gb Hot Swap 512e HDD     | 20                |
| 4XB7A13906                                       | B496    | ThinkSystem 3.5" 14TB 7.2K SAS 12Gb Hot Swap 512e HDD     | 20                |
| 4XB7A13911                                       | B7EZ    | ThinkSystem 3.5" 16TB 7.2K SAS 12Gb Hot Swap 512e HDD     | 20                |
| 4XB7A38266                                       | BCFP    | ThinkSystem 3.5" 18TB 7.2K SAS 12Gb Hot Swap 512e HDD     | 20                |
| <b>3.5-inch hot-swap SED HDDs - 12 Gb NL SAS</b> |         |   |                   |
| 7XB7A00047                                       | AUUH    | ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512n HDD FIPS | 20                |
| 7XB7A00066                                       | B0YQ    | ThinkSystem 3.5" 8TB 7.2K SAS 12Gb Hot Swap 512e HDD FIPS | 20                |

Table 45. 3.5-inch hot-swap 6 Gb SATA HDDs

| Part number                                  | Feature | Description   | Maximum supported |
|--|---------|---|-------------------|
| <b>3.5-inch hot-swap HDDs - 6 Gb NL SATA</b> |         |   |                   |
| 7XB7A00049                                   | AUUF    | ThinkSystem 3.5" 1TB 7.2K SATA 6Gb Hot Swap 512n HDD  | 20                |
| 7XB7A00050                                   | AUUD    | ThinkSystem 3.5" 2TB 7.2K SATA 6Gb Hot Swap 512n HDD  | 20                |
| 7XB7A00051                                   | AUU8    | ThinkSystem 3.5" 4TB 7.2K SATA 6Gb Hot Swap 512n HDD  | 20                |
| 7XB7A00052                                   | AUUA    | ThinkSystem 3.5" 6TB 7.2K SATA 6Gb Hot Swap 512e HDD  | 20                |
| 7XB7A00053                                   | AUU9    | ThinkSystem 3.5" 8TB 7.2K SATA 6Gb Hot Swap 512e HDD  | 20                |
| 7XB7A00054                                   | AUUB    | ThinkSystem 3.5" 10TB 7.2K SATA 6Gb Hot Swap 512e HDD | 20                |
| 7XB7A00068                                   | B118    | ThinkSystem 3.5" 12TB 7.2K SATA 6Gb Hot Swap 512e HDD | 20                |
| 4XB7A13907                                   | B497    | ThinkSystem 3.5" 14TB 7.2K SATA 6Gb Hot Swap 512e HDD | 20                |
| 4XB7A13914                                   | B7F0    | ThinkSystem 3.5" 16TB 7.2K SATA 6Gb Hot Swap 512e HDD | 20                |
| 4XB7A38130                                   | BCFH    | ThinkSystem 3.5" 18TB 7.2K SATA 6Gb Hot Swap 512e HDD | 20                |

Table 46. 3.5-inch hot-swap 12 Gb SAS SSDs

| <b>Part number</b>   | <b>Feature</b> | <b>Description</b>  | <b>Maximum supported</b> |
|--|----------------|---|--------------------------|
| 4XB7A70011   | BG03           | ThinkSystem 3.5" Nytro 3732 400GB Performance SAS 12Gb Hot Swap SSD | 20                       |
| 4XB7A70010   | BG02           | ThinkSystem 3.5" Nytro 3732 800GB Performance SAS 12Gb Hot Swap SSD | 20                       |
| 4XB7A70009   | BG01           | ThinkSystem 3.5" Nytro 3732 1.6TB Performance SAS 12Gb Hot Swap SSD | 20                       |
| 4XB7A70008   | BG00           | ThinkSystem 3.5" Nytro 3732 3.2TB Performance SAS 12Gb Hot Swap SSD | 20                       |
| <b>3.5-inch hot-swap SSDs - 12 Gb SAS - Mixed Use/Mainstream (3-5 DWPD)</b>            |                |   |                          |
| 4XB7A17066   | B8HT           | ThinkSystem 3.5" PM1645a 800GB Mainstream SAS 12Gb Hot Swap SSD     | 20                       |
| 4XB7A17043   | B8JN           | ThinkSystem 3.5" PM1645a 1.6TB Mainstream SAS 12Gb Hot Swap SSD     | 20                       |
| 4XB7A17067   | B8JK           | ThinkSystem 3.5" PM1645a 3.2TB Mainstream SAS 12Gb Hot Swap SSD     | 20                       |
| 4XB7A17068   | B8JG           | ThinkSystem 3.5" PM1645a 6.4TB Mainstream SAS 12Gb Hot Swap SSD     | 20                       |
| <b>3.5-inch hot-swap SSDs - 12 Gb SAS - Read Intensive/Entry/Capacity (&lt;3 DWPD)</b> |                |   |                          |
| 4XB7A17058   | B91E           | ThinkSystem 3.5" PM1643a 3.84TB Entry SAS 12Gb Hot Swap SSD         | 20                       |
| 4XB7A17059   | BEVK           | ThinkSystem 3.5" PM1643a 7.68TB Entry SAS 12Gb Hot Swap SSD         | 20                       |



Table 47. 3.5-inch hot-swap 6 Gb SATA SSDs

| Part number   | Feature | Description  | Maximum supported |
|---|---------|--|-------------------|
| <b>3.5-inch hot-swap SSDs - 6 Gb SATA - Mixed Use/Mainstream (3-5 DWPD)</b>   |         |  |                   |
| 4XB7A17137  | BA4W    | ThinkSystem 3.5" S4620 480GB Mixed Use SATA 6Gb HS SSD           | 20                |
| 4XB7A17138  | BA4X    | ThinkSystem 3.5" S4620 960GB Mixed Use SATA 6Gb HS SSD           | 20                |
| 4XB7A17139  | BA4Y    | ThinkSystem 3.5" S4620 1.92TB Mixed Use SATA 6Gb HS SSD          | 20                |
| 4XB7A17140  | BK7P    | ThinkSystem 3.5" S4620 3.84TB Mixed Use SATA 6Gb HS SSD          | 20                |
| 4XB7A17096  | B8JL    | ThinkSystem 3.5" 5300 240GB Mainstream SATA 6Gb Hot Swap SSD     | 20                |
| 4XB7A17097  | B8JF    | ThinkSystem 3.5" 5300 480GB Mainstream SATA 6Gb Hot Swap SSD     | 20                |
| 4XB7A17098  | B8J0    | ThinkSystem 3.5" 5300 960GB Mainstream SATA 6Gb Hot Swap SSD     | 20                |
| 4XB7A17099  | B8HR    | ThinkSystem 3.5" 5300 1.92TB Mainstream SATA 6Gb Hot Swap SSD    | 20                |
| 4XB7A17100  | B8HX    | ThinkSystem 3.5" 5300 3.84TB Mainstream SATA 6Gb Hot Swap SSD    | 20                |
| 4XB7A13639  | B49R    | ThinkSystem 3.5" S4610 240GB Mixed Use SATA 6Gb HS SSD           | 20                |
| 4XB7A13640  | B49S    | ThinkSystem 3.5" S4610 480GB Mixed Use SATA 6Gb HS SSD           | 20                |
| 4XB7A13641  | B49T    | ThinkSystem 3.5" S4610 960GB Mixed Use SATA 6Gb HS SSD           | 20                |
| 4XB7A13642  | B49U    | ThinkSystem 3.5" S4610 1.92TB Mixed Use SATA 6Gb HS SSD          | 20                |
| 4XB7A13643  | B49V    | ThinkSystem 3.5" S4610 3.84TB Mixed Use SATA 6Gb HS SSD          | 20                |
| <b>3.5-inch hot-swap SSDs - 6 Gb SATA - Read Intensive/Entry (&lt;3 DWPD)</b> |         |  |                   |
| 4XB7A17118  | BA7K    | ThinkSystem 3.5" S4520 240GB Read Intensive SATA 6Gb HS SSD      | 20                |
| 4XB7A17119  | BA7L    | ThinkSystem 3.5" S4520 480GB Read Intensive SATA 6Gb HS SSD      | 20                |
| 4XB7A17120  | BA7M    | ThinkSystem 3.5" S4520 960GB Read Intensive SATA 6Gb HS SSD      | 20                |
| 4XB7A17121  | BA7N    | ThinkSystem 3.5" S4520 1.92TB Read Intensive SATA 6Gb HS SSD     | 20                |
| 4XB7A17122  | BK7F    | ThinkSystem 3.5" S4520 3.84TB Read Intensive SATA 6Gb HS SSD     | 20                |
| 4XB7A17123  | BK7G    | ThinkSystem 3.5" S4520 7.68TB Read Intensive SATA 6Gb HS SSD     | 20                |
| 4XB7A38276  | BCTH    | ThinkSystem 3.5" Multi Vendor 240GB Entry SATA 6Gb Hot Swap SSD  | 20                |
| 4XB7A38277  | BCTJ    | ThinkSystem 3.5" Multi Vendor 480GB Entry SATA 6Gb Hot Swap SSD  | 20                |
| 4XB7A38278  | BCTK    | ThinkSystem 3.5" Multi Vendor 960GB Entry SATA 6Gb Hot Swap SSD  | 20                |
| 4XB7A38279  | BCTL    | ThinkSystem 3.5" Multi Vendor 1.92TB Entry SATA 6Gb Hot Swap SSD | 20                |
| 4XB7A38281  | BCTM    | ThinkSystem 3.5" Multi Vendor 3.84TB Entry SATA 6Gb Hot Swap SSD | 20                |
| 4XB7A17081  | B8JB    | ThinkSystem 3.5" 5300 240GB Entry SATA 6Gb Hot Swap SSD          | 20                |
| 4XB7A17082  | B8J9    | ThinkSystem 3.5" 5300 480GB Entry SATA 6Gb Hot Swap SSD          | 20                |
| 4XB7A17083  | B8JC    | ThinkSystem 3.5" 5300 960GB Entry SATA 6Gb Hot Swap SSD          | 20                |
| 4XB7A17084  | B8HZ    | ThinkSystem 3.5" 5300 1.92TB Entry SATA 6Gb Hot Swap SSD         | 20                |
| 4XB7A17085  | B8HQ    | ThinkSystem 3.5" 5300 3.84TB Entry SATA 6Gb Hot Swap SSD         | 20                |
| 4XB7A17086  | B8J3    | ThinkSystem 3.5" 5300 7.68TB Entry SATA 6Gb Hot Swap SSD         | 20                |
| 4XB7A13625  | B49D    | ThinkSystem 3.5" S4510 240GB Read Intensive SATA 6Gb HS SSD      | 20                |
| 4XB7A13626  | B49E    | ThinkSystem 3.5" S4510 480GB Read Intensive SATA 6Gb HS SSD      | 20                |
| 4XB7A13627  | B49F    | ThinkSystem 3.5" S4510 960GB Read Intensive SATA 6Gb HS SSD      | 20                |
| 4XB7A13628  | B49G    | ThinkSystem 3.5" S4510 1.92TB Read Intensive SATA 6Gb HS SSD     | 20                |
| 4XB7A13629  | B49H    | ThinkSystem 3.5" S4510 3.84TB Read Intensive SATA 6Gb HS SSD     | 20                |

Table 48. 3.5-inch hot-swap PCIe 4.0 NVMe SSDs

| Part number   | Feature | Description  | Maximum supported |
|---|---------|--|-------------------|
| 3.5-inch SSDs - U.2 PCIe 4.0 NVMe - Mixed Use/Mainstream (3-5 DWPD) |         |  |                   |
| 4XB7A17155  | BCFM    | ThinkSystem 3.5" U.2 P5600 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD           | 12                |
| 4XB7A17156  | BCFJ    | ThinkSystem 3.5" U.2 P5600 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD           | 12                |
| 4XB7A17157  | BCFQ    | ThinkSystem 3.5" U.2 P5600 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD           | 12                |
| 3.5-inch SSDs - U.3 PCIe 4.0 NVMe - Mixed Use/Mainstream (3-5 DWPD) |         |  |                   |
| 4XB7A64176  | BE04    | ThinkSystem 3.5" Kioxia CM6-V 800GB Mainstream NVMe PCIe 4.0 x4 Hot Swap SSD | 12*               |
| 4XB7A17115  | B96V    | ThinkSystem 3.5" Kioxia CM6-V 1.6TB Mainstream NVMe PCIe4.0 x4 Hot Swap SSD  | 12*               |
| 4XB7A17116  | B96K    | ThinkSystem 3.5" Kioxia CM6-V 3.2TB Mainstream NVMe PCIe4.0 x4 Hot Swap SSD  | 12*               |
| 4XB7A17117  | B96W    | ThinkSystem 3.5" Kioxia CM6-V 6.4TB Mainstream NVMe PCIe4.0 x4 Hot Swap SSD  | 12*               |

\* CM5 and CM6 drives are not supported with the ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter, 4C57A65446

**Note:** NVMe PCIe SSDs support surprise hot removal and hot insertion, provided the operating system supports PCIe SSD hot-swap.

Table 49. 3.5-inch hot-swap PCIe 3.0 NVMe SSDs

| Part number   | Feature | Description   | Maximum supported |
|---|---------|---|-------------------|
| 3.5-inch SSDs - U.2 PCIe 3.0 NVMe - Mixed Use/Mainstream (3-5 DWPD) |         |   |                   |
| 4XB7A13944  | B58C    | ThinkSystem 3.5" Intel P4610 1.6TB Mainstream NVMe PCIe3.0 x4 Hot Swap SSD    | 12                |
| 4XB7A08534  | B221    | ThinkSystem 3.5" Toshiba CM5-V 3.2TB Mainstream NVMe PCIe 3.0 x4 Hot Swap SSD | 12*               |
| 3.5-inch SSDs - U.2 PCIe 3.0 NVMe - Read Intensive/Entry (<3 DWPD)  |         |   |                   |
| 4XB7A10178  | B34Q    | ThinkSystem 3.5" PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD             | 12                |
| 4XB7A10179  | B34R    | ThinkSystem 3.5" PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD             | 12                |

\* CM5 and CM6 drives are not supported with the ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter, 4C57A65446

**Note:** NVMe PCIe SSDs support surprise hot removal and hot insertion, provided the operating system supports PCIe SSD hot-swap.

Table 50. M.2 SATA drives

| Part number   | Feature | Description  | Maximum supported |
|---|---------|--|-------------------|
| M.2 SSDs - 6 Gb SATA - Read Intensive/Entry (<3 DWPD) |         |  |                   |
| 7N47A00129  | AUUL    | ThinkSystem M.2 32GB SATA 6Gbps Non-Hot Swap SSD       | 2                 |
| 7N47A00130  | AUUV    | ThinkSystem M.2 128GB SATA 6Gbps Non-Hot Swap SSD      | 2                 |
| 4XB7A17071  | B8HS    | ThinkSystem M.2 5300 240GB SATA 6Gbps Non-Hot Swap SSD | 2                 |
| 4XB7A17073  | B919    | ThinkSystem M.2 5300 480GB SATA 6Gbps Non-Hot Swap SSD | 2                 |
| 4XB7A17074  | B8JJ    | ThinkSystem M.2 5300 960GB SATA 6Gbps Non-Hot Swap SSD | 2                 |

Table 51. M.2 NVMe drives

| Part number                                      | Feature | Description   | Maximum supported |
|--|---------|---|-------------------|
| M.2 SSDs - NVMe - Read Intensive/Entry (<3 DWPD) |         |   |                   |
| 4XB7A38177                                       | B8JR    | ThinkSystem M.2 PM983 960GB NVMe PCIe 3.0 x4 Non-Hot Swap SSD | 2                 |

## USB memory key

For general portable storage needs, the server also supports the USB memory key option that is listed in the following table.

Table 52. USB memory key

| Part number | Feature | Description                      |
|-------------|---------|----------------------------------|
| 4X77A08621  | B8NV    | ThinkSystem 32GB USB Flash Drive |

## Internal backup units

The server does not supports any internal backup units, such as tape drives or RDX drives. External backup units are available as described in the [External backup units](#) section.

## Optical drives

The server supports the external USB optical drive listed in the following table.

Table 53. External optical drive

| Part number | Feature code | Description  |
|-------------|--------------|--|
| 7XA7A05926  | AVV8         | ThinkSystem External USB DVD RW Optical Disk Drive |

The drive is based on the Lenovo Slim DVD Burner DB65 drive and supports the following formats: DVD-RAM, DVD-RW, DVD+RW, DVD+R, DVD-R, DVD-ROM, DVD-R DL, CD-RW, CD-R, CD-ROM.

## I/O expansion

The server supports a total of up to 8 PCIe 4.0 slots, all full-height and all with rear access, plus a dedicated OCP 3.0 SFF slot for networking. Slot availability is based on riser selection. The use of slots 4-8 requires that both processors be installed.

The slots are provided by riser cards:

- Riser 1: Slots 1, 2 and 3 (CPU 1)
- Riser 2: Slots 4, 5, and 6 (CPU 2)
- Riser 3: Slot 7 (CPU 1), and Slot 8 (CPU 2)

**NVMe support:** The use of Riser 3 is mutually exclusive to onboard NVMe support as they use the same PCIe connectors. See the [System architecture](#) section.

The slots in each riser are either PCIe 4.0 x16 or PCIe 4.0 x8 depending on the riser card selected as listed in the table below. All x8 slots are physically x16 slots. Riser 1 and Riser 2 are also available with PCIe 3.0 adapter slots, using a lower-cost PCIe 3.0 riser, if desired.

As discussed in the [Internal storage](#) section, the server supports drive bays in the rear of the server. Depending on the drive bays selected, the number of slots available for adapters is reduced. The figure below shows the supported combinations of slots and drive bays.

**Tip:** For configurations with 2.5-inch front drive bays, an internal RAID adapter or HBA can be installed in a dedicated space and cabled to a PCIe 4.0 x8 connector, thereby freeing up a slot for other purposes.

The following figure shows the locations of the rear-accessible slots for each configuration selection. The OCP slot is located in the lower-left corner.

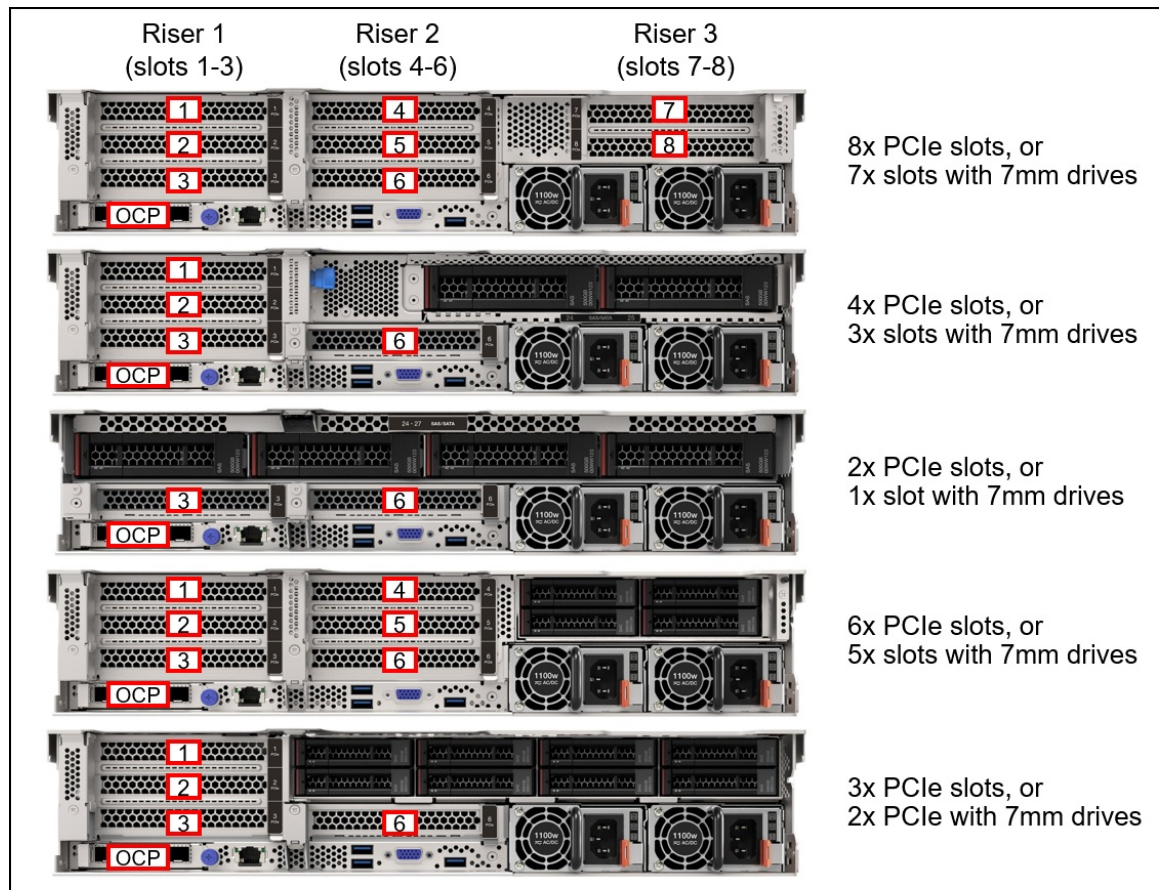


Figure 15. SR665 slot configurations

The following table lists the riser slots available for CTO builds.

**Tip:** It is also possible to not have any slot selections, in which case slot fillers will be derived in the configurator. Slots can be added later as field upgrades using option part numbers as listed in the [Field upgrades table](#).

Table 54. Riser cards

| Feature code   | Description                                | Slot configuration* |               |               | Purpose                          |
|----------------|--|---------------------|---------------|---------------|----------------------------------|
|                |  | Slot 1              | Slot 2        | Slot 3        |                                  |
| <b>Riser 1</b> |  | <b>Slot 1</b>       | <b>Slot 2</b> | <b>Slot 3</b> |                                  |
| B8LJ           | 2U PCIe Gen4 x16/x8/x8 Riser 1 or 2        | Gen4 x16            | Gen4 x8       | Gen4 x8       | 3 slots PCIe 4.0                 |
| B8LL           | 2U PCIe Gen3 x16/x8/x8 Riser 1 or 2        | Gen3 x16            | Gen3 x8       | Gen3 x8       | 3 slots PCIe 3.0                 |
| B8LQ           | 2U PCIe Gen4 x16/x16 Slot 1&2 Riser 1 or 2 | Gen4 x16            | Gen4 x16      | No slot       | COM port or 7mm drives in slot 3 |
| B8LR           | 2U PCIe Gen4 x16/x16 Slot 2&3 Riser 1 or 2 | No slot             | Gen4 x16      | Gen4 x16      | Double-wide GPU in slot 2        |
| B8LS           | 2U PCIe Gen4 x16 Riser 1 or 2              | No slot             | No slot       | Gen4 x16      | For 4x 3.5-inch drives           |
| <b>Riser 2</b> |  | <b>Slot 4</b>       | <b>Slot 5</b> | <b>Slot 6</b> |                                  |
| B8LJ           | 2U PCIe Gen4 x16/x8/x8 Riser 1 or 2        | Gen4 x16            | Gen4 x8       | Gen4 x8       | 3 slots PCIe 4.0                 |
| B8LL           | 2U PCIe Gen3 x16/x8/x8 Riser 1 or 2        | Gen3 x16            | Gen3 x8       | Gen3 x8       | 3 slots PCIe 3.0                 |
| B8LQ           | 2U PCIe Gen4 x16/x16 Slot 1&2 Riser 1 or 2 | Gen4 x16            | Gen4 x16      | No slot       | COM port or 7mm drives in slot 6 |
| B8LR           | 2U PCIe Gen4 x16/x16 Slot 2&3 Riser 1 or 2 | No slot             | Gen4 x16      | Gen4 x16      | Double-wide GPU in slot 5        |
| B8LS           | 2U PCIe Gen4 x16 Riser 1 or 2              | No slot             | No slot       | Gen4 x16      | For 2x or 4x 3.5-inch drives     |
| <b>Riser 3</b> |  | <b>Slot 7</b>       | <b>Slot 8</b> |               |                                  |
| B8MK           | 2U PCIe Gen4 x16/x16 PCIe Riser 3          | Gen4 x16            | Gen4 x16      |               | 2x PCIe 4.0 x16 slots            |
| B97Z           | 2U PCIe Gen4 x8/x8 PCIe Riser 3            | Gen4 x8             | Gen4 x8       |               | 2x PCIe 4.0 x8 slots             |

\* All PCIe x8 slots are physically x16 slots

## Serial port

The SR665 optionally supports a RS-232 serial port by adding a COM port bracket to either slot 3 or slot 6. Ordering information is shown in the following table.

Table 55. Serial port

| Part number | Feature code | Description                         |
|-------------|--------------|-------------------------------------|
| 4Z17A80446  | BMNJ         | ThinkSystem COM Port Upgrade Kit v2 |
| 7Z17A02577  | AUSL         | ThinkSystem COM Port Upgrade Kit    |

The bracket is shown in the following figure.

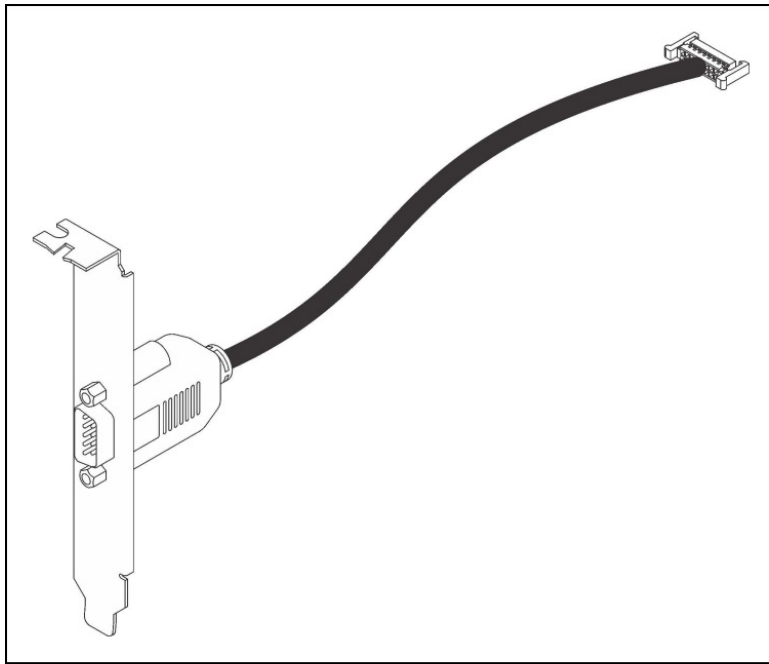


Figure 16. ThinkSystem COM Port Upgrade Kit

## Field upgrades

Slot configurations can also be ordered as field upgrades using option part numbers, as listed in the following table.

**Tip:** If you want to add both a 7mm drive enclosure plus PCIe slots in slot 4 and 5, you will need to order the 7mm drive option (either 4XH7A60927 or 4XH7A60928) plus the 2U x16/x16/E PCIe G4 Riser 1/2 Kit, 4XH7A09878. The latter part number provides the 2-slot riser card.

Table 56. Field upgrades for PCIe slots

| Part number                                      | Description and contents   | Maximum Supported |
|--|--|-------------------|
| <b>Riser 1 &amp; 2 field upgrades</b>            |  |                   |
| 4XH7A61079                                       | ThinkSystem SR650 V2/SR665 x16/x8/x8 PCIe G4 Riser1/2 Option Kit v2 <ul style="list-style-type: none"> <li>3-Slot Riser Cage (full-height slots)</li> <li>3-Slot PCIe 4.0 (x16+x8+x8) Riser Card</li> </ul>  | 2                 |
| 4XH7A61080                                       | ThinkSystem SR650 V2/SR665 x16/x8/x8 PCIe G3 Riser 1/2 Option Kit v2 <ul style="list-style-type: none"> <li>3-Slot Riser Cage (full-height slots)</li> <li>3-Slot PCIe 3.0 (x16+x8+x8) Riser Card</li> </ul>   | 2                 |
| 4XH7A61081                                       | ThinkSystem SR650 V2/SR665 x16/x16/E PCIe G4 Riser 1/2 Option Kit v2 <ul style="list-style-type: none"> <li>3-Slot Riser Cage (full-height slots)</li> <li>2-Slot PCIe 4.0 (x16+x16+Empty) Riser Card</li> </ul>   | 2                 |
| 4XH7A09880                                       | ThinkSystem SR650 V2/SR665 x16 PCIe G4 Riser 1/2 Option Kit <ul style="list-style-type: none"> <li>1-Slot Riser Cage (full-height slot)</li> <li>1-Slot PCIe 4.0 x16 Riser Card</li> </ul>   | 2                 |
| 4XH7A61082                                       | ThinkSystem SR650 V2/SR665 E/x16/x16 PCIe G4 Riser 1/2 Option Kit v2 <ul style="list-style-type: none"> <li>3-Slot Riser Cage (full-height slots)</li> <li>2-Slot PCIe 4.0 (Empty+x16+x16) Riser Card</li> </ul>   | 2                 |
| <b>Riser 2 with 7mm drive bay field upgrades</b> |  |                   |
| 4XH7A60927                                       | ThinkSystem SR665 Rear 2x7mm SATA RAID Enablement Kit <ul style="list-style-type: none"> <li>2-bay SATA RAID HS drive enclosure with cables</li> <li>Riser Cage for 7mm drive + 2 full-height slots*</li> <li>Riser Cage for 7mm drives without slots</li> <li>2x 7mm drive bay fillers</li> </ul> | 1                 |
| 4XH7A60928                                       | ThinkSystem SR665 Rear 2x7mm NVMe RAID Enablement Kit <ul style="list-style-type: none"> <li>2-bay NVMe RAID HS drive enclosure with cables</li> <li>Riser Cage for 7mm drive + 2 full-height slots*</li> <li>Riser Cage for 7mm drives without slots</li> <li>2x 7mm drive bay fillers</li> </ul> | 1                 |
| <b>Riser 3 field upgrades</b>                    |  |                   |
| 4XH7A09884                                       | ThinkSystem SR665 x8/x8 PCIe Riser3 Kit <ul style="list-style-type: none"> <li>2-Slot Riser Cage (full-height slots)</li> <li>2-Slot PCIe 4.0 (x8+x8) Riser Card</li> <li>Rear wall bracket</li> <li>Signal/power cable set (4 cables)</li> </ul>  | 1                 |
| 4XH7A61083                                       | ThinkSystem SR665 x16/x16 PCIe G4 Riser3 Option Kit v2 <ul style="list-style-type: none"> <li>2-Slot Riser Cage (full-height slots)</li> <li>2-Slot PCIe 4.0 (x16+x16) Riser Card</li> <li>Rear wall bracket</li> <li>Signal/power cable set (6 cables)</li> </ul>                                 | 1                 |

\* To add two x16 slots, you will need to also order a riser card using option 4XH7A09878

## Network adapters

The server has a dedicated OCP 3.0 SFF slot with PCIe 4.0 x16 host interface. See [Figure 3](#) for the location of the OCP slot.

The following table lists the supported OCP adapters. One port can optionally be shared with the XCC management processor for Wake-on-LAN and NC-SI support. Only 1 OCP card can be installed in the server.

Table 57. Supported OCP adapters

| Part number                   | Feature code | Description   | Maximum supported |
|-------------------------------|--------------|---|-------------------|
| <b>Gigabit</b>                |              |   |                   |
| 4XC7A08235                    | B5T1         | ThinkSystem Broadcom 5719 1GbE RJ45 4-port OCP Ethernet Adapter                     | 1                 |
| 4XC7A08277                    | B93E         | ThinkSystem Intel I350 1GbE RJ45 4-port OCP Ethernet Adapter                        | 1                 |
| <b>Combo Gigabit + 10 GbE</b> |              |   |                   |
| 4XC7A08239                    | B5SS         | ThinkSystem Broadcom 57416 10GBASE-T 2-port + 5720 1GbE 2-port OCP Ethernet Adapter | 1                 |
| <b>10 GbE</b>                 |              |   |                   |
| 4XC7A08236                    | B5ST         | ThinkSystem Broadcom 57416 10GBASE-T 2-port OCP Ethernet Adapter                    | 1                 |
| 4XC7A08240                    | B5T4         | ThinkSystem Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter                    | 1                 |
| 4XC7A08278                    | BCD5         | ThinkSystem Intel X710-T2L 10GBASE-T 2-port OCP Ethernet Adapter                    | 1                 |
| 4XC7A08310                    | BB8U         | ThinkSystem Marvell QL41132 10GBASE-T 2-port OCP Ethernet Adapter                   | 1                 |
| <b>25 GbE</b>                 |              |   |                   |
| 4XC7A08237                    | B5SZ         | ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port OCP Ethernet Adapter               | 1                 |
| 4XC7A08242                    | B5SV         | ThinkSystem Broadcom 57454 10/25GbE SFP28 4-port OCP Ethernet Adapter               | 1                 |
| 4XC7A08294                    | BCD4         | ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter               | 1                 |
| 4XC7A08264                    | B5SW         | ThinkSystem Marvell QL41232 10/25GbE SFP28 2-Port OCP Ethernet Adapter              | 1                 |
| 4XC7A08246                    | B5T2         | ThinkSystem Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port OCP Ethernet Adapter       | 1                 |
| 4XC7A62582                    | BE4T         | ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port OCP Ethernet Adapter       | 1                 |

For more information, including the transceivers and cables that each adapter supports, see the list of Lenovo Press Product Guides in the Networking adapters category: <https://lenovopress.com/servers/options/ethernet>

The following table lists additional supported network adapters that can be installed in the regular PCIe slots.

Table 58. Supported PCIe Network Adapters

| Part number             | Feature code | Description | Maximum supported | Slots supported |
|-------------------------|--------------|-------------|-------------------|-----------------|
| <b>Gigabit Ethernet</b> |              |             |                   |                 |



| Part number                                 | Feature code | Description  | Maximum supported | Slots supported |
|---|--------------|--|-------------------|-----------------|
| 7ZT7A00482                                  | AUZX         | ThinkSystem Broadcom 5720 1GbE RJ45 2-Port PCIe Ethernet Adapter               | 8                 | All slots       |
| 7ZT7A00484                                  | AUZV         | ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter               | 8                 | All slots       |
| 7ZT7A00533                                  | AUZZ         | ThinkSystem I350-F1 PCIe 1Gb 1-Port SFP Ethernet Adapter                       | 8                 | All slots       |
| 7ZT7A00534                                  | AUZY         | ThinkSystem I350-T2 PCIe 1Gb 2-Port RJ45 Ethernet Adapter                      | 8                 | All slots       |
| 7ZT7A00535                                  | AUZW         | ThinkSystem I350-T4 PCIe 1Gb 4-Port RJ45 Ethernet Adapter                      | 8                 | All slots       |
| <b>10 GbE</b>                               |              |  |                   |                 |
| 7ZT7A00496                                  | AUKP         | ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter              | 8                 | All slots       |
| 4XC7A08245                                  | B5SU         | ThinkSystem Broadcom 57454 10GBASE-T 4-port PCIe Ethernet Adapter              | 8                 | All slots       |
| 00MM860                                     | ATPX         | Intel X550-T2 Dual Port 10GBase-T Adapter                                      | 8                 | All slots       |
| 7ZT7A00537                                  | AUKX         | ThinkSystem Intel X710-DA2 PCIe 10Gb 2-Port SFP+ Ethernet Adapter              | 8                 | All slots       |
| 4XC7A08225                                  | B31G         | ThinkSystem QLogic QL41134 PCIe 10Gb 4-Port Base-T Ethernet Adapter            | 8                 | All slots       |
| <b>25 GbE</b>                               |              |  |                   |                 |
| 4XC7A08238                                  | B5T0         | ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter         | 8                 | All slots       |
| 4XC7A08316                                  | BD49         | ThinkSystem Broadcom 57454 10/25GbE SFP28 4-port PCIe Ethernet Adapter V2      | 8                 | All slots       |
| 4XC7A08241                                  | B5T3         | ThinkSystem Broadcom 57454 10/25GbE SFP28 4-port PCIe Ethernet Adapter         | 8                 | All slots       |
| 4XC7A08295                                  | BCD6         | ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter         | 8                 | All slots       |
| 4XC7A08270                                  | B652         | ThinkSystem Marvell QL41232 10/25GbE SFP28 2-Port PCIe Ethernet Adapter        | 8                 | All slots       |
| 4XC7A08249                                  | B653         | ThinkSystem Mellanox ConnectX-4 Lx 10/25GbE SFP28 2-port PCIe Ethernet Adapter | 8                 | All slots       |
| 4XC7A62580                                  | BE4U         | ThinkSystem Mellanox ConnectX-6 Lx 10/25GbE SFP28 2-Port PCIe Ethernet Adapter | 8                 | All slots       |
| 4XC7A62581                                  | BHE2         | ThinkSystem Solarflare X2522-Plus 10/25GbE SFP28 2-Port PCIe Ethernet Adapter  | 8                 | All slots       |
| 4XC7A08317                                  | BFPU         | ThinkSystem Xilinx Alveo U25 25GbE SFP28 2-Port PCIe FPGA Adapter              | 2                 | 1, 3, 4†        |
| <b>100Gb Ethernet and HDR100 InfiniBand</b> |              |  |                   |                 |
| 4XC7A08297                                  | B96F         | ThinkSystem Broadcom 57508 100GbE QSFP56 2-port PCIe 4 Ethernet Adapter        | 6                 | Any 6 slots     |
| 4XC7A08248                                  | B8PP         | ThinkSystem Mellanox ConnectX-6 Dx 100GbE QSFP56 2-port PCIe Ethernet Adapter  | 6                 | Any 6 slots     |
| 4C57A14177                                  | B4R9         | ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 1-port PCIe VPI Adapter   | 6                 | Any 6 slots     |
| 4C57A14178                                  | B4RA         | ThinkSystem Mellanox ConnectX-6 HDR100/100GbE QSFP56 2-port PCIe VPI Adapter   | 6                 | Any 6 slots     |

| Part number                       | Feature code | Description   | Maximum supported | Slots supported |
|-----------------------------------|--------------|---|-------------------|-----------------|
| 4XC7A76757                        | BLC2         | ThinkSystem Xilinx Alveo U50 Data Center Accelerator Adapter                | 2                 | 1, 3, 4†        |
| 200Gb Ethernet and HDR InfiniBand |              |   |                   |                 |
| 4C57A15326                        | B4RC         | ThinkSystem Mellanox ConnectX-6 HDR/200GbE QSFP56 1-port PCIe 4 VPI Adapter | 3                 | 1,2,3,7         |
| 4C57A14179                        | B4RB         | ThinkSystem Mellanox HDR/200GbE 2x PCIe Aux Kit                             | 3                 | 4,5,6,8         |

\* See thermal requirements below

† With the NVIDIA A100 installed, the Xilinx adapters can be installed in slots 3 and 4; without the A100 GPU, the Xilinx adapters can be installed in slots 1 and 4.

**Use of the Mellanox HDR PCIe Aux Kit :** The HDR Aux Kit (4C57A14179) enables a Socket Direct connection which allows the HDR adapter (4C57A15326) to have direct access to each of the two processors. Such a configuration ensures extremely low latency and CPU utilization in addition to higher network throughput. Socket Direct also maximizes AI and ML application performance, as it enables native GPU-Direct Technologies.

The following thermal requirement apply to HDR and HDR100 adapters:

- The Performance cooling fans must be installed. See the [Cooling](#) section for details.

For more information, including the transceivers and cables that each adapter supports, see the list of Lenovo Press Product Guides in the Networking adapters category:

<https://lenovopress.com/servers/options/ethernet>

## Fibre Channel host bus adapters

The following table lists the Fibre Channel HBAs supported by the SR665.

Note that the Emulex LPe35000 adapters are supported either with EPYC 7002 "Rome" processors or with EPYC 7003 "Milan" processors, as indicated in the table.

Table 59. Fibre Channel HBAs

| Part number                     | Feature code | Description   | EPYC 7002 | EPYC 7003 | Max qty | Slots supported |
|---------------------------------|--------------|---|-----------|-----------|---------|-----------------|
| <b>64 Gb Fibre Channel HBAs</b> |              |   |           |           |         |                 |
| 4XC7A77485                      | BLC1         | ThinkSystem Emulex LPe36002 64Gb 2-port PCIe Fibre Channel Adapter    | Yes       | Yes       | 8       | All slots       |
| <b>32 Gb Fibre Channel HBAs</b> |              |   |           |           |         |                 |
| 4XC7A08250                      | B5SX         | ThinkSystem Emulex LPe35000 32Gb 1-port PCIe Fibre Channel Adapter    | Yes       | No        | 8       | All slots       |
| 4XC7A08251                      | B5SY         | ThinkSystem Emulex LPe35002 32Gb 2-port PCIe Fibre Channel Adapter    | Yes       | No        | 8       | All slots       |
| 4XC7A76498                      | BJ3G         | ThinkSystem Emulex LPe35000 32Gb 1-port PCIe Fibre Channel Adapter V2 | Yes       | Yes       | 8       | All slots       |
| 4XC7A76525                      | BJ3H         | ThinkSystem Emulex LPe35002 32Gb 2-port PCIe Fibre Channel Adapter V2 | Yes       | Yes       | 8       | All slots       |
| 4XC7A08279                      | BA1G         | ThinkSystem QLogic QLE2770 32Gb 1-Port PCIe Fibre Channel Adapter     | Yes       | Yes       | 8       | All slots       |
| 4XC7A08276                      | BA1F         | ThinkSystem QLogic QLE2772 32Gb 2-Port PCIe Fibre Channel Adapter     | Yes       | Yes       | 8       | All slots       |
| <b>16 Gb Fibre Channel HBAs</b> |              |   |           |           |         |                 |
| 01CV840                         | ATZV         | Emulex 16Gb Gen6 FC Dual-port HBA                                     | Yes       | Yes       | 8       | All slots       |
| 01CV830                         | ATZU         | Emulex 16Gb Gen6 FC Single-port HBA                                   | Yes       | Yes       | 8       | All slots       |
| 01CV760                         | ATZC         | QLogic 16Gb Enhanced Gen5 FC Dual-port HBA                            | Yes       | Yes       | 8       | All slots       |
| 01CV750                         | ATZB         | QLogic 16Gb Enhanced Gen5 FC Single-port HBA                          | Yes       | Yes       | 8       | All slots       |

For more information, see the list of Lenovo Press Product Guides in the Host bus adapters category: <https://lenovopress.com/servers/options/hba>

## SAS adapters for external storage

The following table lists SAS HBAs and RAID adapters supported by SR665 server for use with external storage.

Table 60. Adapters for external storage

| Part number                   | Feature code | Description   | Maximum supported | Slots supported |
|-------------------------------|--------------|---|-------------------|-----------------|
| <b>SAS HBAs</b>               |              |   |                   |                 |
| 7Y37A01090                    | AUNR         | ThinkSystem 430-8e SAS/SATA 12Gb HBA                | 8                 | All slots       |
| 7Y37A01091                    | AUNN         | ThinkSystem 430-16e SAS/SATA 12Gb HBA               | 8                 | All slots       |
| 4Y37A09724                    | B8P7         | ThinkSystem 440-16e SAS/SATA PCIe Gen4 12Gb HBA     | 8                 | All slots       |
| <b>External RAID adapters</b> |              |   |                   |                 |
| 7Y37A01087                    | AUNQ         | ThinkSystem RAID 930-8e 4GB Flash PCIe 12Gb Adapter | 4*                | 1, 2, 3         |

\* See below regarding supercap requirements

The RAID 930-8e uses a flash power module (supercap), which can be installed in one of up to four locations in the server depending on the server configuration. See the [RAID flash power module \(supercap\) support](#) section for details. The number of 930-8e RAID adapters supported is based on how many supercaps can be installed in the server. If an internal 930i RAID adapter with flash power modules is installed, the maximum number of 930-8e adapters supported is reduced by 1.

For more information, see the list of Lenovo Press Product Guides in the Host bus adapters and RAID adapters categories:

<https://lenovopress.com/servers/options/hba>  
<https://lenovopress.com/servers/options/raid>

The following table compares the specifications of the external SAS HBAs and RAID adapters.

Table 61. Comparison of external storage adapters

| Feature                            | 430-8e                 | 430-16e                | 440-16e                | 930-8e                 |
|------------------------------------|------------------------|------------------------|------------------------|------------------------|
| Adapter type                       | HBA                    | HBA                    | HBA                    | External RAID          |
| Part number                        | 7Y37A01090             | 7Y37A01091             | 4Y37A09724             | 7Y37A01087             |
| Controller chip                    | LSI SAS3408            | LSI SAS3416            | Broadcom SAS3816       | LSI SAS3516            |
| Broadcom equivalent                | HBA 9400-8e            | HBA 9400-16e           | HBA 9500-16e           | MegaRAID 9480-8e       |
| Host interface                     | PCIe 3.0x8             | PCIe 3.0x8             | PCIe 4.0 x8            | PCIe 3.0x8             |
| Port interface                     | 12 Gb SAS              | 12 Gb SAS              | 12 Gb SAS              | 12 Gb SAS              |
| Number of ports                    | 8                      | 16                     | 16                     | 8                      |
| Port connectors                    | 2x Mini-SAS HD SFF8644 | 4x Mini-SAS HD SFF8644 | 4x Mini-SAS HD SFF8644 | 2x Mini-SAS HD SFF8644 |
| Drive interface                    | SAS/SATA               | SAS/SATA               | SAS/SATA               | SAS,SATA               |
| Drive type                         | HDD/SSD/SED*           | HDD/SSD/SED*           | HDD/SSD/SED*           | HDD, SED, SSD          |
| Hot-swap drives                    | Yes                    | Yes                    | Yes                    | Yes                    |
| Max devices                        | 1024                   | 1024                   | 1024                   | 216                    |
| RAID levels                        | None                   | None                   | None                   | 0, 1, 10, 5, 50, 6, 60 |
| JBOD mode                          | Yes                    | Yes                    | Yes                    | Yes                    |
| Cache                              | None                   | None                   | None                   | 4GB (Standard)         |
| CacheVault cache protection        | None                   | None                   | None                   | Yes (Flash)            |
| Performance Accelerator (FastPath) | No                     | No                     | No                     | Yes                    |
| SSD Caching (CacheCade Pro 2.0)    | No                     | No                     | No                     | No                     |
| SED support                        | Yes*                   | Yes*                   | Yes*                   | Yes (Safestore)        |

\* SAS HBAs support SEDs (self-encrypting drives) by using software on the server and simply passing SED commands through the HBA to the drives. SED support by RAID controllers is provided using the built-in MegaRAID SafeStore functionality of the adapter.

## Flash storage adapters

The SR665 supports the PCIe Flash Storage adapters listed in the following table.

Table 62. Flash Storage Adapters

| Part number  | Feature code | Description   | Maximum supported | Slots supported |
|--|--------------|---|-------------------|-----------------|
| Mainstream NVMe PCIe Adapters - Optimized for mixed-intensive application workloads with an endurance of 3-5 DWPD. |              |   |                   |                 |
| 4XB7A14075   | B8JH         | ThinkSystem HHHL PM1735 1.6TB Mainstream NVMe PCIe 4.0 x8 Flash Adapter | 8                 | All slots       |
| 4XB7A14076   | B8HW         | ThinkSystem HHHL PM1735 3.2TB Mainstream NVMe PCIe 4.0 x8 Flash Adapter | 8                 | All slots       |
| 4XB7A14077   | B96M         | ThinkSystem HHHL PM1735 6.4TB Mainstream NVMe PCIe4.0 x8 Flash Adapter  | 8                 | All slots       |

For details about these adapters, see the Lenovo Press product guides in the Flash Adapters category:  
<https://lenovopress.com/servers/options/ssdadapter>

### Configuration rules

The following configuration requirements must be met when installing flash storage adapters:

- GPU adapters are not supported
- Performance fans are required and will be derived by the configurator for configure-to-order builds.
- When adding Flash adapters as field upgrades, you will be required to replace all standard fans with performance fan modules. See the [Cooling](#) section for ordering information.

### GPU adapters

The SR665 supports the following graphics processing units (GPUs).

Table 63. Supported GPUs

| Part number             | Feature code | Description  | Aux power | Maximum supported | Slots supported |
|-------------------------|--------------|--|-----------|-------------------|-----------------|
| <b>Double-wide GPUs</b> |              |  |           |                   |                 |
| 4X67A76715‡             | BLK1‡        | ThinkSystem NVIDIA A100 80GB PCIe Gen4 Passive GPU       | Yes       | 3                 | 2,5,7*          |
| 4X67A13135‡             | BEL5‡        | ThinkSystem NVIDIA A100 40GB PCIe Gen4 Passive GPU       | Yes       | 3                 | 2,5,7*          |
| 4X67A72593              | BEL4         | ThinkSystem NVIDIA A40 48GB PCIe Gen4 Passive GPU        | Yes       | 3                 | 2,5,7*          |
| 4X67A76581              | BJHG         | ThinkSystem NVIDIA A30 24GB PCIe Gen4 Passive GPU        | Yes       | 3                 | 2,5,7*          |
| 4X67A76727              | BNFE         | ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU        | Yes       | 3                 | 2,5,7           |
| 4X67A65441†             | BCGR         | ThinkSystem NVIDIA Quadro RTX 8000 48GB PCIe Passive GPU | Yes       | 3                 |                 |
| 4X67A13125†             | BB2D         | ThinkSystem NVIDIA Quadro RTX 6000 24GB PCIe Passive GPU | Yes       | 3                 | 2,5,7*          |
| <b>Single-wide GPUs</b> |              |  |           |                   |                 |
| 4X67A71311              | BFTZ         | ThinkSystem NVIDIA A10 24GB PCIe Gen4 Passive GPU        | Yes       | 3                 | 1,4,7           |
| 4X67A11584              | B31D         | ThinkSystem NVIDIA Quadro P620 2GB PCIe Active GPU       | No        | 8                 | 1-8             |
| 4X67A14926              | B4YB         | ThinkSystem NVIDIA T4 16GB PCIe Passive GPU              | No        | 8                 | 1-8             |

‡ For SR665 systems with AMD EPYC 7003 "Milan" processors, the A100 is supported in either factory orders (CTO) or field upgrades. For SR665 systems with AMD EPYC 7002 "Rome" processors, the A100 is only supported under Special Bid conditions and is not supported as a field upgrade. Requires the refreshed system board as listed in the [Models](#) section

\* When a double-wide GPU is installed in slot 2, 5 or 7, the adjacent slot 1, 4 and 8 respectively is not available

† The RTX 6000 and RTX 8000 GPUs are only available via Special Bid.

For information about these GPUs, see the ThinkSystem GPU Summary, available at:

<https://lenovopress.com/lp0768-thinksystem-thinkagile-gpu-summary>

### Configuration rules

The following configuration requirements must be met when installing GPUs:

- All GPUs installed must be identical
- Flash storage adapters are not supported.
- Only P620 GPUs (40W power) are supported with the following front drive configurations:
  - 24x 2.5-inch front drive bays
  - 12x 3.5-inch front drive bays
- The T4, V100, V100S and A100 GPUs are only supported with the following front drive configurations:
  - 8x 2.5-inch front drive bays
  - 16x 2.5-inch front drive bays
  - 8x 3.5-inch front drive bays
- Middle drive bays and Rear drive bays are not supported

## Riser selections for double-wide GPUs

When a double-wide GPU is installed in slot 2, 5 or 7, the adjacent slot 1, 4 and 8 respectively is not available. The riser cards listed in the following table are used with double-wide GPUs.

Table 64. Risers needed for double-wide GPUs

| Riser                   | Part number | Feature code | Description  |
|-------------------------|-------------|--------------|--|
| Riser 1 (GPU in slot 2) | 4XH7A61082  | B8LR         | ThinkSystem SR650 V2/SR665 E/x16/x16 PCIe G4 Riser 1/2 Option Kit v2 |
| Riser 2 (GPU in slot 5) | 4XH7A61082  | B8LR         | ThinkSystem SR650 V2/SR665 E/x16/x16 PCIe G4 Riser 1/2 Option Kit v2 |
| Riser 3 (GPU in slot 7) | 4XH7A61083  | B8MK         | ThinkSystem SR665 x16/x16 PCIe G4 Riser3 Option Kit v2               |

## GPU Thermal Option Kit

When installing an NVIDIA A10 GPU or any double-wide GPU as a field upgrade, you will also need to order the Thermal Option Kit as listed in the following table. This kit is not required for the NVIDIA T4 or P620 GPUs.

- When adding GPUs as field upgrades, you will be required to replace all Standard fans with Performance fans. See the [Cooling](#) section for ordering information.
- When installing a double-wide GPU or the NVIDIA A10, you will also need to order the Thermal Option Kit as listed in the following table (not required for NVIDIA T4 or P620 GPUs). The Thermal Option Kit includes the required auxiliary power cable for supported GPUs except for the NVIDIA A10, which requires 4X97A81933.

**A10 auxiliary power cable:** The ThinkSystem SR665 GPU Thermal Option Kit v2 is required when installing the NVIDIA A10 as a field upgrade, however the kit does not contain the required auxiliary power cable (SBB7A21686). For the NVIDIA A10, you will *also* need to order the ThinkSystem SR650 V2/SR665 NVIDIA SW GPU Cable Kit, 4X97A81933 as described in the [GPU cable kits](#) section.

Table 65. GPU Thermal Option Kits

| Part number | Description   |
|-------------|---|
| 4M17A80478  | ThinkSystem SR665 GPU Thermal Option Kit v2 (for double-wide GPUs) <ul style="list-style-type: none"> <li>• 2x 1U processor heatsinks</li> <li>• 1x ThinkSystem 2U GPU air duct</li> <li>• 3x GPU extension air ducts</li> <li>• 3x Power cables for double-wide GPU (SBB7A49792)</li> <li>• 3x Air duct fillers</li> </ul> |
| 4M17A11759  | ThinkSystem SR665 GPU Thermal Option Kit (for double-wide GPUs) <ul style="list-style-type: none"> <li>• 2x 1U processor heatsinks</li> <li>• 1x ThinkSystem 2U GPU air duct</li> <li>• 3x GPU extension air ducts</li> <li>• 3x Power cables for double-wide GPU (SBB7A21691)</li> <li>• 3x Air duct fillers</li> </ul>    |

## GPU cable kits



The following cable kits are offered to provide auxiliary power cables for GPUs that require one. See the [Supported GPUs table](#) to see which GPUs require an auxiliary power cable.

Configuration notes:

- These cable kits are only required for field upgrades; CTO orders will automatically include any required cables.
- The DW (double-wide) cable kit is only required if you are adding *additional* double-wide GPUs to a server that already has a DW GPU installed from a CTO order. If you are doing a field upgrade to install the *first* DW GPU to a server, order the GPU Thermal Option Kit instead. The GPU Thermal Option Kit includes the necessary power cables.
- The SW (single-wide) cable kit is required if you are doing any field upgrades to add a single-wide GPU that requires an auxiliary power cable. The GPU Thermal Option Kit is required for the first SW GPU installed, however the kit *does not* include the necessary power cable for a SW GPU.
- The SW cable kit includes three Y-cables, however these are currently not used in the SR665, because the server does not support two single-wide GPUs (power > 75W) in a single riser.

Table 66. GPU cable kits

| Part number | Description   |
|-------------|---|
| 4X97A81932  | ThinkSystem SR650 V2/SR665 NVIDIA DW GPU Cable Kit <ul style="list-style-type: none"> <li>• 3x Power cables for double-wide GPU (SBB7A49792)</li> </ul>   |
| 4X97A81933  | ThinkSystem SR650 V2/SR665 NVIDIA SW GPU Cable Kit <ul style="list-style-type: none"> <li>• 3x Power cables for single-wide GPU (SBB7A21686)</li> <li>• 3x Power Y-cables when 2x single-wide GPUs installed on one riser (SBB7A23757)</li> </ul> |

## Cooling

The SR665 server has up to six 60 mm hot-swap fans. Five fans are needed when one processor is installed and six fans are required when two processors are installed. The server offers N+1 redundancy. The server also has one or two additional fans integrated in each of the two power supplies.

Depending on the configuration, the server will need either Standard fans (single-rotor 17K RPM) or Performance fans (dual-rotor 18K RPM).

Under all of the following conditions, standard fans can be used:

- No GPUs
- No Mellanox ConnectX-6 100 GbE/200 GbE adapter with Active Optical Cables
- No Xilinx Alveo U25 FPGA adapter
- No Broadcom 57454 10GBASE-T 4-port OCP adapter
- No 256 GB 3DS RDIMMs
- No mid-chassis drive bays
- No rear drive bays

If any conditions are not met, Performance fans are required.

Ordering information for the fans is listed in the following table.

Table 67. Fan ordering information

| Part number | Feature code | Description                                  | Number required         |
|-------------|--------------|--|-------------------------|
| 4F17A14490  | B8LX         | ThinkSystem SR665 Standard Fan Option Kit    | 1x CPU: 5<br>2x CPUs: 6 |
| 4F17A14489  | B8LY         | ThinkSystem SR665 Performance Fan Option Kit | 1x CPU: 5<br>2x CPUs: 6 |

## Power supplies

The SR665 supports up to two redundant hot-swap power supplies.

The power supply choices are listed in the following table. Both power supplies used in server must be identical.

**Tip:** When configuring a server in the DCSC configurator, power consumption is calculated precisely by interfacing with Lenovo Capacity Planner. You can therefore select the appropriate power supply for your configuration. However, do consider future upgrades that may require additional power needs.

Table 68. Power supply options

| Part number                | Feature code | Description   | Maximum supported | 110V AC | 220V AC | 240V DC China only | -48V DC |
|----------------------------|--------------|---|-------------------|---------|---------|--------------------|---------|
| <b>AC input power</b>      |              |   |                   |         |         |                    |         |
| 4P57A26290                 | B8Q9         | ThinkSystem 500W(230V/115V) V2 Platinum Hot-Swap Power Supply   | 2                 | Yes     | Yes     | Yes                | No      |
| 4P57A26291                 | B8QA         | ThinkSystem 750W (230/115V) V2 Platinum Hot-Swap Power Supply   | 2                 | Yes     | Yes     | Yes                | No      |
| 4P57A26292                 | B8QD         | ThinkSystem 750W (230V) V2 Titanium Hot-Swap Power Supply       | 2                 | No      | Yes     | Yes                | No      |
| 4P57A26293                 | B8QC         | ThinkSystem 1100W (230V/115V) V2 Platinum Hot-Swap Power Supply | 2                 | Yes     | Yes     | Yes                | No      |
|                            | BMUF         | ThinkSystem V2 1800W (230V) Platinum Hot-Swap Power Supply v2   | 2                 | No      | Yes     | Yes                | No      |
| 4P57A26294                 | B8QB         | ThinkSystem V2 1800W (230V) Platinum Hot-Swap Power Supply      | 2                 | No      | Yes     | Yes                | No      |
| <b>-48V DC input power</b> |              |   |                   |         |         |                    |         |
| 4P57A26296                 | B8QE         | ThinkSystem 1100W -48V DC v2 Power Supply                       | 2                 | No      | No      | No                 | Yes     |

Dual-voltage power supplies are auto-sensing and support both 110V AC (100-127V 50/60 Hz) and 220V AC (200-240V 50/60 Hz) power. For China customers, all power supplies support 240V DC.

All supported AC power supplies have a C14 connector. The -48V DC power supply has a Weidmuller TOP 4GS/3 7.6 terminal as shown in the following figure.

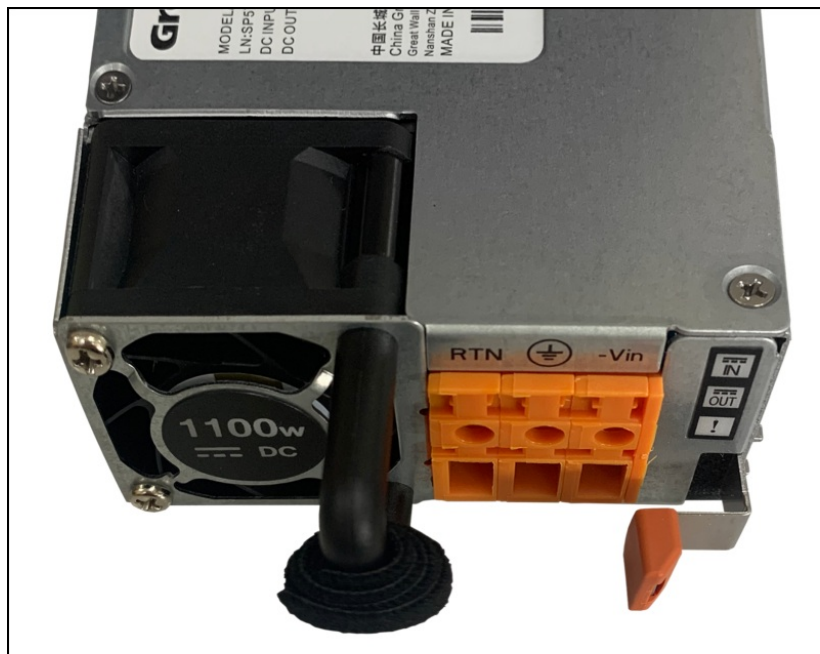


Figure 17. ThinkSystem 1100W -48V DC v2 Power Supply

Power supply options do not include a line cord. For server configurations, the inclusion of a power cord is model dependent. Configure-to-order models can be configured without power cords if desired.

## Power cords

Line cords and rack power cables with C13 connectors can be ordered as listed in the following table.

**110V customers:** If you plan to use the ThinkSystem 1100W power supply with a 110V power source, select a power cable that is rated above 10A. Power cables that are rated at 10A or below are not supported with 110V power.

Table 69. Power cords

| Part number | Feature code | Description   |
|-------------|--------------|---|
| Rack cables |              |   |
| 00Y3043     | A4VP         | 1.0m, 10A/100-250V, C13 to C14 Jumper Cord                  |
| 39Y7937     | 6201         | 1.5m, 10A/100-250V, C13 to C14 Jumper Cord                  |
| 4L67A08369  | 6570         | 2.0m, 13A/100-250V, C13 to C14 Jumper Cord                  |
| 4L67A08366  | 6311         | 2.8m, 10A/100-250V, C13 to C14 Jumper Cord                  |
| 4L67A08370  | 6400         | 2.8m, 13A/100-250V, C13 to C14 Jumper Cord                  |
| 39Y7932     | 6263         | 4.3m, 10A/100-250V, C13 to C14 Jumper Cord                  |
| 4L67A08371  | 6583         | 4.3m, 13A/100-250V, C13 to C14 Jumper Cord                  |
| Line cords  |              |   |
| 39Y7930     | 6222         | 2.8m, 10A/250V, C13 to IRAM 2073 (Argentina) Line Cord      |
| 81Y2384     | 6492         | 4.3m, 10A/250V, C13 to IRAM 2073 (Argentina) Line Cord      |
| 39Y7924     | 6211         | 2.8m, 10A/250V, C13 to AS/NZS 3112 (Australia/NZ) Line Cord |
| 81Y2383     | 6574         | 4.3m, 10A/250V, C13 to AS/NZS 3112 (Australia/NZ) Line Cord |
| 69Y1988     | 6532         | 2.8m, 10A/250V, C13 to NBR 14136 (Brazil) Line Cord         |
| 81Y2387     | 6404         | 4.3m, 10A/250V, C13 to NBR 14136 (Brazil) Line Cord         |
| 39Y7928     | 6210         | 2.8m, 10A/220V, C13 to GB 2099.1 (China) Line Cord          |
| 81Y2378     | 6580         | 4.3m, 10A/250V, C13 to GB 2099.1 (China) Line Cord          |
| 39Y7918     | 6213         | 2.8m, 10A/250V, C13 to DK2-5a (Denmark) Line Cord           |
| 81Y2382     | 6575         | 4.3m, 10A/250V, C13 to DK2-5a (Denmark) Line Cord           |
| 39Y7917     | 6212         | 2.8m, 10A/250V, C13 to CEE 7/7 (Europe) Line Cord           |
| 81Y2376     | 6572         | 4.3m, 10A/250V, C13 to CEE 7/7 (Europe) Line Cord           |
| 39Y7927     | 6269         | 2.8m, 10A/250V, C13 to IS 6538 (India) Line Cord            |
| 81Y2386     | 6567         | 4.3m, 10A/250V, C13 to IS 6538 (India) Line Cord            |
| 39Y7920     | 6218         | 2.8m, 10A/250V, C13 to SI 32 (Israel) Line Cord             |
| 81Y2381     | 6579         | 4.3m, 10A/250V, C13 to SI 32 (Israel) Line Cord             |
| 39Y7921     | 6217         | 2.8m, 10A/250V, C13 to CEI 23-16 (Italy) Line Cord          |
| 81Y2380     | 6493         | 4.3m, 10A/250V, C13 to CEI 23-16 (Italy) Line Cord          |
| 4L67A08362  | 6495         | 4.3m, 12A/200V, C13 to JIS C-8303 (Japan) Line Cord         |
| 39Y7922     | 6214         | 2.8m, 10A/250V, C13 to SABS 164-1 (South Africa) Line Cord  |
| 81Y2379     | 6576         | 4.3m, 10A/250V, C13 to SANS 164-1 (South Africa) Line Cord  |
| 39Y7926     | 6335         | 4.3m, 12A/100V, C13 to JIS C-8303 (Japan) Line Cord         |

| Part number | Feature code | Description  |
|-------------|--------------|--|
| 39Y7925     | 6219         | 2.8m, 12A/220V, C13 to KSC 8305 (S. Korea) Line Cord     |
| 81Y2385     | 6494         | 4.3m, 12A/250V, C13 to KSC 8305 (S. Korea) Line Cord     |
| 39Y7919     | 6216         | 2.8m, 10A/250V, C13 to SEV 1011-S24507 (Swiss) Line Cord |
| 81Y2390     | 6578         | 4.3m, 10A/250V, C13 to SEV 1011-S24507 (Swiss) Line Cord |
| 23R7158     | 6386         | 2.8m, 10A/125V, C13 to CNS 10917 (Taiwan) Line Cord      |
| 81Y2375     | 6317         | 2.8m, 10A/250V, C13 to CNS 10917 (Taiwan) Line Cord      |
| 81Y2374     | 6402         | 2.8m, 13A/125V, C13 to CNS 10917 (Taiwan) Line Cord      |
| 4L67A08363  | AX8B         | 4.3m, 10A/125V, C13 to CNS 10917 (Taiwan) Line Cord      |
| 81Y2389     | 6531         | 4.3m, 10A/250V, C13 to CNS 10917 (Taiwan) Line Cord      |
| 81Y2388     | 6530         | 4.3m, 13A/125V, C13 to CNS 10917 (Taiwan) Line Cord      |
| 39Y7923     | 6215         | 2.8m, 10A/250V, C13 to BS 1363/A (UK) Line Cord          |
| 81Y2377     | 6577         | 4.3m, 10A/250V, C13 to BS 1363/A (UK) Line Cord          |
| 90Y3016     | 6313         | 2.8M, 10A/125V, C13 to NEMA 5-15P (US) Line Cord         |
| 46M2592     | A1RF         | 2.8m, 10A/250V, C13 to NEMA 6-15P (US) Line Cord         |
| 00WH545     | 6401         | 2.8M, 13A/125V, C13 to NEMA 5-15P (US) Line Cord         |
| 4L67A08359  | 6370         | 4.3m, 10A/125V, C13 to NEMA 5-15P (US) Line Cord         |
| 4L67A08361  | 6373         | 4.3m, 10A/250V, C13 to NEMA 6-15P (US) Line Cord         |
| 4L67A08360  | AX8A         | 4.3m, 13A/125V, C13 to NEMA 5-15P (US) Line Cord         |

For the -48V DC Power Supply, the following power cable is supported.

Table 70. -48V DC power cable

| Part number | Feature code | Description                        |
|-------------|--------------|------------------------------------|
| 4X97A59831  | BE4V         | 2.5m, -48VDC Interconnecting Cable |

## Systems management

The server contains an integrated service processor, XClarity Controller (XCC), which provides advanced control, monitoring, and alerting functions. The XCC is based on the Pilot4 XE401 baseboard management controller (BMC) using a dual-core ARM Cortex A9 service processor.

Topics in this section:

- [Local management](#)
- [System status with XClarity Mobile](#)
- [Remote management](#)
- [Lenovo XClarity Provisioning Manager](#)
- [Lenovo XClarity Administrator](#)
- [Lenovo XClarity Essentials](#)
- [Lenovo XClarity Energy Manager](#)
- [Lenovo Capacity Planner](#)

## Local management

The SR665 offers a front operator panel with key LED status indicators, as shown in the following figure.

**Tip:** The Network LED only shows network activity of the installed OCP network adapter.

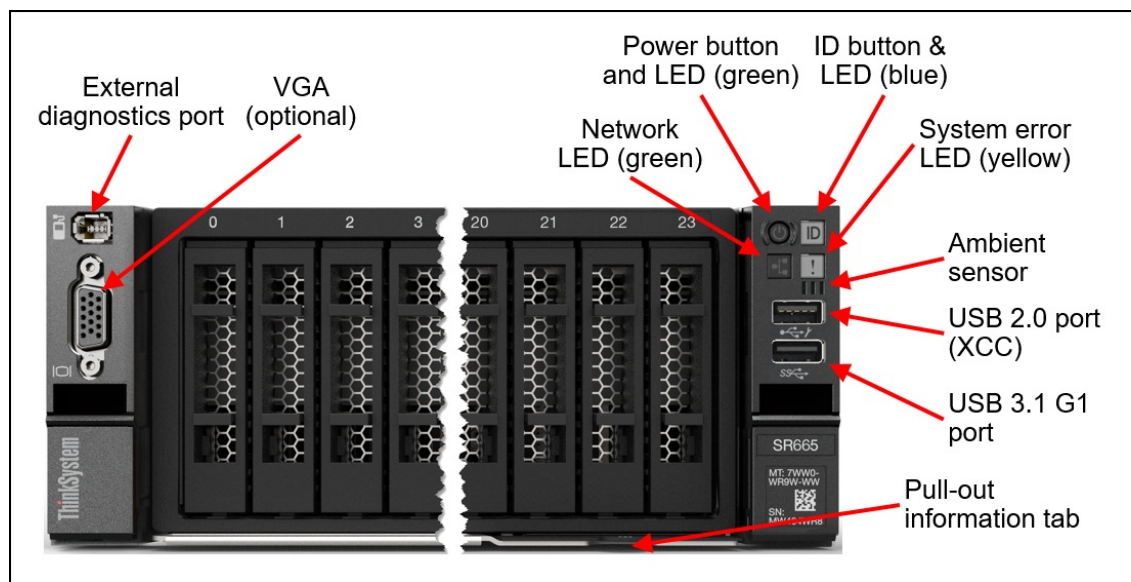


Figure 18. Front operator controls are on the left and right side of the server

## Light path diagnostics

The server offers light path diagnostics. If an environmental condition exceeds a threshold or if a system component fails, XCC lights LEDs inside the server to help you diagnose the problem and find the failing part. The server has fault LEDs next to the following components:

- Each processor
- Each memory DIMM
- Each drive bay
- Each system fan
- Each power supply

## Integrated Diagnostics Panel for 8x 2.5-inch and 16x 2.5-inch drive bay configurations

For configurations with 8x 2.5-inch or 16x 2.5-inch drive bays at the front, the server can optionally be configured to have a pull-out Integrated Diagnostics Panel. The following figure shows the standard (fixed) operator panel and the optional Integrated Diagnostics Panel.

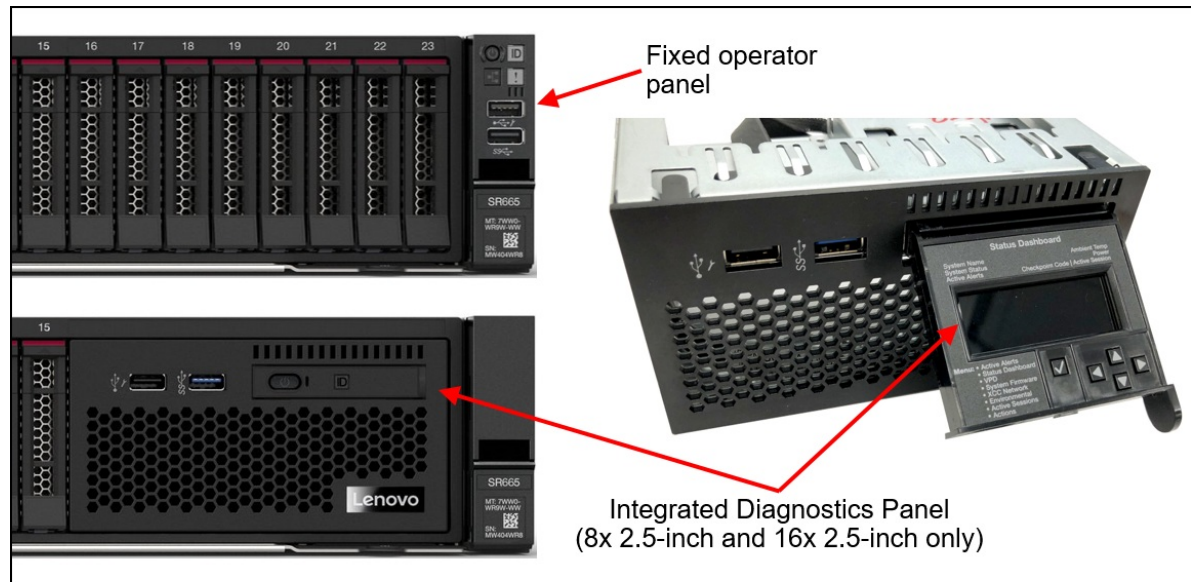


Figure 19. Operator panel choices for the 8x 2.5-inch drive bay configuration

The Integrated Diagnostics Panel allows quick access to system status, firmware, network, and health information. The LCD display on the panel and the function buttons give you access to the following information:

- Active alerts
- Status Dashboard
- System VPD: machine type & mode, serial number, UUID string
- System firmware levels: UEFI and XCC firmware
- XCC network information: hostname, MAC address, IP address, DNS addresses
- Environmental data: Ambient temperature, CPU temperature, AC input voltage, estimated power consumption
- Active XCC sessions
- System reset action

The Integrated Diagnostics Panel can be configured as listed in the following table. It is only available configure-to-order (CTO); not available as a field upgrade.

Table 71. Ordering information for the Integrated Diagnostics Panel

| Part number | Feature code | Description                                 |
|-------------|--------------|---|
| CTO only    | B8MS         | ThinkSystem 2U 16x2.5" Front Operator Panel |

## External Diagnostics Handset

The SR665 also has a port to connect an External Diagnostics Handset as shown in the following figure. The External Diagnostics Handset has the same functions as the Integrated Diagnostics Panel but has the advantages of not consuming space on the front of the server plus it can be shared amongst many servers in your data center. The handset has a magnet on the back of it to allow you to easily mount it on a convenient place on any rack cabinet.

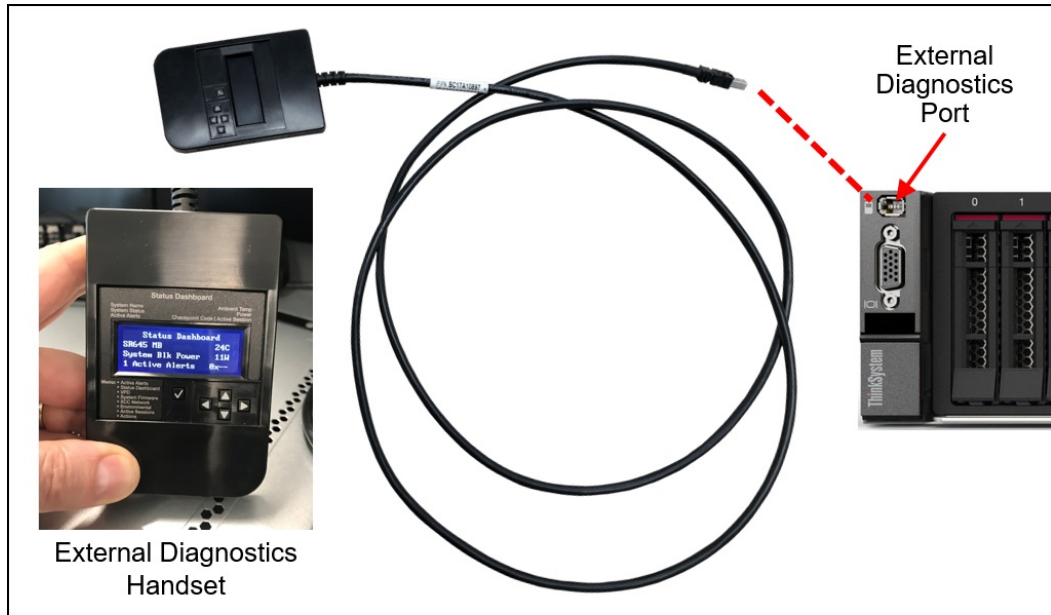


Figure 20. External Diagnostics Handset

Ordering information for the External Diagnostics Handset with is listed in the following table.

Table 72. External Diagnostics Handset ordering information


| Part number | Feature code | Description                  |
|-------------|--------------|------------------------------|
| 4TA7A64874  | BEUX         | External Diagnostics Handset |

The front of the server also houses an information pull-out tab (also known as the network access tag). See [Figure 2](#) for the location. A label on the tab shows the network information (MAC address and other data) to remotely access the service processor.

### System status with XClarity Mobile

The XClarity Mobile app includes a tethering function where you can connect your Android or iOS device to the server via USB to see the status of the server.

The steps to connect the mobile device are as follows:

1. Enable USB Management on the server, by holding down the ID button for 3 seconds (or pressing the dedicated USB management button if one is present)
2. Connect the mobile device via a USB cable to the server's USB port with the management symbol 
3. In iOS or Android settings, enable Personal Hotspot or USB Tethering
4. Launch the Lenovo XClarity Mobile app

Once connected you can see the following information:

- Server status including error logs (read only, no login required)
- Server management functions (XClarity login credentials required)



## Remote management

The server offers a dedicated RJ45 port at the rear of the server for remote management via the XClarity Controller management processor. The port supports 10/100/1000 Mbps speeds.

Remote server management is provided through industry-standard interfaces:

- Intelligent Platform Management Interface (IPMI) Version 2.0
- Simple Network Management Protocol (SNMP) Version 3 (no SET commands; no SNMP v1)
- Common Information Model (CIM-XML)
- Representational State Transfer (REST) support
- Redfish support (DMTF compliant)
- Web browser - HTML 5-based browser interface (Java and ActiveX not required) using a responsive design (content optimized for device being used - laptop, tablet, phone) with NLS support

IPMI via the Ethernet port (IPMI over LAN) is supported, however it is disabled by default. For CTO orders you can specify whether you want the feature enabled or disabled in the factory, using the feature codes listed in the following table.

Table 73. IPMI-over-LAN settings

| Feature code | Description                     |
|--------------|---------------------------------|
| B7XZ         | Disable IPMI-over-LAN (default) |
| B7Y0         | Enable IPMI-over-LAN            |

There are two XClarity Controller upgrades available for the server, Advanced and Enterprise.

XCC Advanced Upgrade adds the following functions:

- Remotely viewing video with graphics resolutions up to 1600x1200 at 75 Hz with up to 23 bits per pixel, regardless of the system state
- Remotely accessing the server using the keyboard and mouse from a remote client
- International keyboard mapping support
- Syslog alerting
- Redirecting serial console via SSH
- Component replacement log (Maintenance History log)
- Access restriction (IP address blocking)
- Lenovo SED security key management
- Displaying graphics for real-time and historical power usage data and temperature

XCC Enterprise Upgrade enables the following additional features:

- Boot video capture and crash video capture
- Virtual console collaboration - Ability for up to 6 remote users to be log into the remote session simultaneously
- Remote console Java client
- Mapping the ISO and image files located on the local client as virtual drives for use by the server
- Mounting the remote ISO and image files via HTTPS, SFTP, CIFS, and NFS
- Power capping
- System utilization data and graphic view
- Single sign on with Lenovo XClarity Administrator
- Update firmware from a repository
- License for XClarity Energy Manager

For configure-to-order (CTO), you can enable the required XCC functionality by selecting the appropriate XCC feature codes listed in the following table:

- XCC Standard - select neither feature listed in the table
- XCC Advanced - select feature AVUT
- XCC Enterprise - select feature AUPW

Table 74. XClarity Controller upgrades for configure-to-order

| Feature code | Description  |
|--------------|--|
| AVUT         | ThinkSystem XClarity Controller Standard to Advanced Upgrade   |
| AUPW         | ThinkSystem XClarity Controller Standard to Enterprise Upgrade |

For systems with XCC Standard or XCC Advanced installed, field upgrades are available as listed in the following table.

Table 75. XClarity Controller field upgrades

| Part number | Description  |
|-------------|--|
| 4L47A09132  | ThinkSystem XClarity Controller Standard to Advanced Upgrade<br>(for servers that have XCC Standard)   |
| 4L47A09133  | ThinkSystem XClarity Controller Advanced to Enterprise Upgrade<br>(for servers that have XCC Advanced) |

## Lenovo XClarity Provisioning Manager

Lenovo XClarity Provisioning Manager (LXPM) is a UEFI-based application embedded in ThinkSystem servers and accessible via the F1 key during system boot.

LXPM provides the following functions:

- Graphical UEFI Setup
- System inventory information and VPD update
- System firmware updates (UEFI and XCC)
- RAID setup wizard
- OS installation wizard (including unattended OS installation)
- Diagnostics functions

## Lenovo XClarity Administrator

Lenovo XClarity Administrator is a centralized resource management solution designed to reduce complexity, speed response, and enhance the availability of Lenovo systems and solutions.

Lenovo XClarity Administrator provides agent-free hardware management for ThinkSystem servers, in addition to ThinkServer, System x, and Flex System servers. The administration dashboard is based on HTML 5 and allows fast location of resources so tasks can be run quickly.

Because Lenovo XClarity Administrator does not require any agent software to be installed on the managed endpoints, there are no CPU cycles spent on agent execution, and no memory is used, which means that up to 1GB of RAM and 1 - 2% CPU usage is saved, compared to a typical managed system where an agent is required.

Lenovo XClarity Administrator provides full management function to ThinkSystem servers, including the following:

- Discovery
- Inventory
- Monitoring and alerting
- Call home
- Centralized user management
- Cryptography modes, server certificates, and encapsulation
- Configuration patterns
- Operating system deployment
- Firmware updates

For more information about Lenovo XClarity Administrator, including ordering part numbers, see the Lenovo XClarity Administrator Product Guide: <https://lenovopress.com/tips1200-lenovo-xclarity-administrator>

### **Lenovo XClarity Integrators**

Lenovo also offers software plug-in modules, Lenovo XClarity Integrators, to manage physical infrastructure from leading external virtualization management software tools including those from Microsoft and VMware.

These integrators are offered at no charge, however if software support is required, a Lenovo XClarity Pro software subscription license should be ordered.

Lenovo XClarity Integrators offer the following additional features:

- Ability to discover, manage, and monitor Lenovo server hardware from VMware vCenter or Microsoft System Center
- Deployment of firmware updates and configuration patterns to Lenovo x86 rack servers and Flex System from the virtualization management tool
- Non-disruptive server maintenance in clustered environments that reduces workload downtime by dynamically migrating workloads from affected hosts during rolling server updates or reboots
- Greater service level uptime and assurance in clustered environments during unplanned hardware events by dynamically triggering workload migration from impacted hosts when impending hardware failures are predicted

For more information about all the available Lenovo XClarity Integrators, see the Lenovo XClarity Administrator Product Guide: <https://lenovopress.com/tips1200-lenovo-xclarity-administrator>

## Lenovo XClarity Essentials

Lenovo offers the following XClarity Essentials software tools that can help you set up, use, and maintain the server at no additional cost:

- **Lenovo Essentials OneCLI**  
OneCLI is a collection of server management tools that uses a command line interface program to manage firmware, hardware, and operating systems. It provides functions to collect full system health information (including health status), configure system settings, and update system firmware and drivers.
- **Lenovo Essentials UpdateXpress**  
The UpdateXpress tool is a standalone GUI application for firmware and device driver updates that enables you to maintain your server firmware and device drivers up-to-date and help you avoid unnecessary server outages. The tool acquires and deploys individual updates and UpdateXpress System Packs (UXSPs) which are integration-tested bundles.
- **Lenovo Essentials Bootable Media Creator**  
The Bootable Media Creator (BOMC) tool is used to create bootable media for offline firmware update.

For more information and downloads, visit the Lenovo XClarity Essentials web page:  
<http://support.lenovo.com/us/en/documents/LNVO-center>

## Lenovo XClarity Energy Manager

Lenovo XClarity Energy Manager is a power and temperature management solution for data centers. It is an agent-free, web-based console that enables you to monitor and manage power consumption and temperature in your data center through the management console.

Lenovo XClarity Energy Manager is a licensed product. A single-node XClarity Energy Manager license is included with the XClarity Controller Enterprise (XCC Enterprise) upgrade as described in the [Remote Management](#) section. If your server does not have the XCC Enterprise upgrade, Energy Manager licenses can be ordered as shown in the following table.

Table 76. Lenovo XClarity Energy Manager

| Description | Part number   |
|-------------|---|
| 4L40E51621  | Lenovo XClarity Energy Manager Node License (1 license needed per server) |

**Note:** The SR665 does not support the following Energy Manager functions:

- Power capping
- Policy-based management

For more information about XClarity Energy Manager, see the following resources:

- **Lenovo Support page:**  
<https://datacentersupport.lenovo.com/us/en/solutions/lnvo-lxem>
- **Lenovo Information Center:**  
[https://sysmgt.lenovofiles.com/help/topic/LXEM/lxem\\_overview.html?cp=4](https://sysmgt.lenovofiles.com/help/topic/LXEM/lxem_overview.html?cp=4)

## Lenovo Capacity Planner

Lenovo Capacity Planner is a power consumption evaluation tool that enhances data center planning by enabling IT administrators and pre-sales professionals to understand various power characteristics of racks, servers, and other devices. Capacity Planner can dynamically calculate the power consumption, current, British Thermal Unit (BTU), and volt-ampere (VA) rating at the rack level, improving the planning efficiency for large scale deployments.

For more information, refer to the Capacity Planner web page:

<http://datacentersupport.lenovo.com/us/en/solutions/Invo-lcp>

## Security

The SR665 server offers the following electronic security features:

- Secure Boot function of the AMD EPYC processor
- Firmware signature processes compliant with FIPS and NIST requirements
- Administrator and power-on password
- Integrated Trusted Platform Module (TPM) supporting TPM 2.0. Servers with EPYC 7002 processors also support TPM 1.2.
- Optional Nationz TPM 2.0, available only in China (CTO only)
- Self-encrypting drives (SEDs) with support for enterprise key managers - see the [SED encryption key management](#) section

The server is NIST SP 800-147B compliant.

The SR665 server also offers the following physical security features:

- Chassis intrusion switch
- Optional lockable front security bezel

The optional lockable front security bezel is shown in the following figure and includes a key that enables you to secure the bezel over the drives and system controls thereby reducing the chance of unauthorized or accidental access to the server.

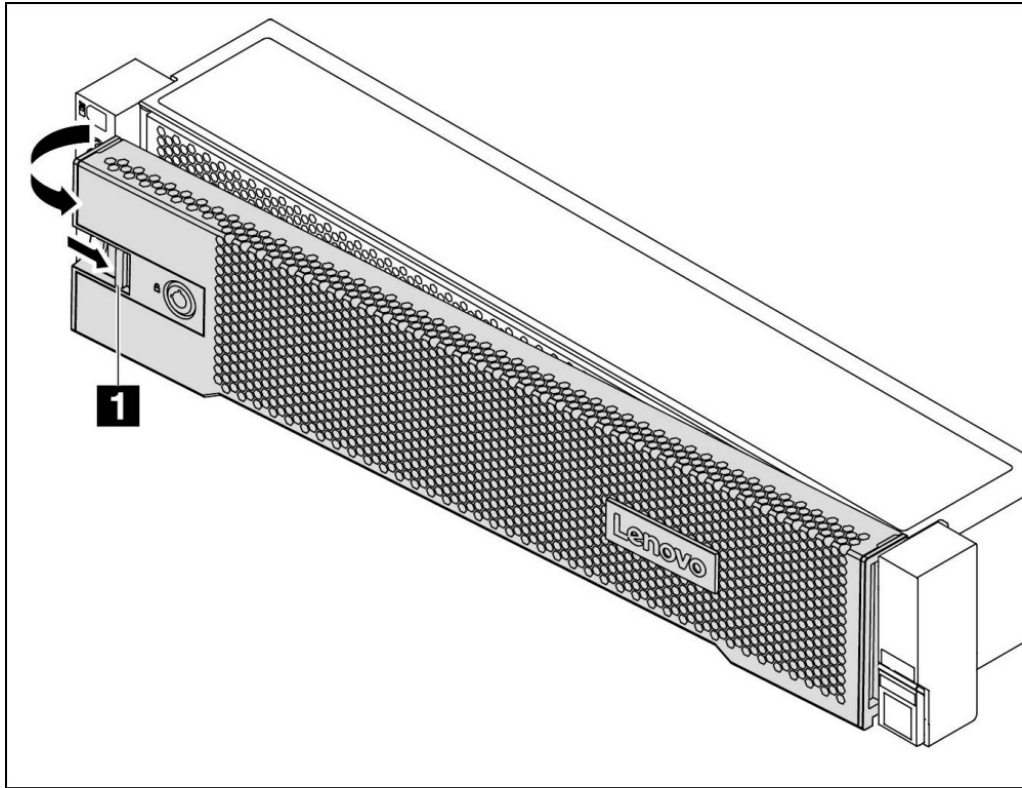


Figure 21. Lockable front security bezel

The dimensions of the security bezel are:

- Width: 437 mm (17.2 in.)
- Height: 87 mm (3.4 in.)
- Width: 23 mm (0.9 in.)

The following table lists the security options for the SR665.

Table 77. Security features

| Part number | Feature code | Description   |
|-------------|--------------|---|
| CTO only*   | B8LE         | ThinkSystem Nationz Trusted Platform Module v2.0 (China customers only) |
| 4XH7A09886  | BAUD         | ThinkSystem SR650 V2/SR665 Security Bezel v2                            |

\* Not available as a field upgrade. The component is CTO or on pre-configured models only.

### Lenovo ThinkShield - Platform Firmware Resiliency

Lenovo's ThinkShield Security is a transparent and comprehensive approach to security that extends to all dimensions of our data center products: from development, to supply chain, and through the entire product lifecycle.

The ThinkSystem SR665 offers Platform Firmware Resiliency (PFR) hardware Root of Trust (RoT) which is NIST SP800-193 compliant. This offering further enhances key platform subsystem protections against unauthorized firmware updates and corruption, to restore firmware to an integral state, and to closely monitor firmware for possible compromise from cyber attacks.

PFR operates upon the following server components:

- UEFI image – the low level server firmware that connects the operating system to the server

hardware

- XCC image – the management “engine” software that controls and reports on the server status separate from the server operating system
- FPGA image – the code that runs the server’s lowest level hardware controller on the motherboard

The Lenovo Platform Root of Trust Hardware performs the following three main functions:

- Detection – Measures the firmware and updates for authenticity
- Recovery – Recovers a corrupted image to a known-safe image
- Protection – Monitors the system to ensure the known-good firmware is not maliciously written

These enhanced protection capabilities are implemented using a dedicated, discrete security processor whose implementation has been rigorously validated by leading third-party security firms. Security evaluation results and design details are available for customer review – providing unprecedented transparency and assurance.

## Security standards

The SR665 supports the following security standards and capabilities:

- **Industry Standard Security Capabilities**

- AMD CPU Enablement
  - AES-NI (Advanced Encryption Standard New Instructions)
  - GMET (Guest Mode Execute Trap)
  - Hardware-based side channel attack resilience enhancements
  - NX (No eXecute)
  - PSB (Platform Secure Boot)
  - Shadow Stack
  - SEV (Secure Encrypted Virtualization)
  - SEV-ES (Encrypted State register encryption)
  - SEV-SNP (Secure Nested Paging)
  - SVM (Secure Virtual Machine)
  - SME (Secure Memory Encryption)
  - UMIP (User Mode Instruction Prevention)
- Microsoft Windows Security Enablement
  - Credential Guard
  - Device Guard
  - Host Guardian Service
- TCG (Trusted Computing Group) TPM (Trusted Platform Module) 2.0
- UEFI (Unified Extensible Firmware Interface) Forum Secure Boot

- **Hardware Root of Trust and Security**

- Independent security subsystem providing platform-wide NIST SP800-193 compliant Platform Firmware Resilience (PFR)
- Host domain RoT supplemented by AMD Platform Secure Boot (PSB)
- Management domain RoT supplemented by System x-derived Immutable Boot Block

- **Platform Security**

- Boot and run-time firmware integrity monitoring with rollback to known-good firmware (e.g., “self-healing”)
- Non-volatile storage bus security monitoring and filtering
- Resilient firmware implementation, such as to detect and defeat unauthorized flash writes or SMM (System Management Mode) memory incursions
- Patent-pending IPMI KCS channel privileged access authorization
- Host and management domain authorization, including integration with CyberArk for

- enterprise password management
- KMIP (Key Management Interoperability Protocol) compliant, including support for IBM SKLM and Thales KeySecure
- Reduced “out of box” attack surface
- Configurable network services

For more information on platform security, see the paper “How to Harden the Security of your ThinkSystem Server and Management Applications” available from <https://lenovopress.com/lp1260-how-to-harden-the-security-of-your-thinksystem-server>.

- **Standards Compliance and/or Support**

- NIST SP800-131A rev 2 “Transitioning the Use of Cryptographic Algorithms and Key Lengths”
- NIST SP800-147B “BIOS Protection Guidelines for Servers”
- NIST SP800-193 “Platform Firmware Resiliency Guidelines”
- ISO/IEC 11889 “Trusted Platform Module Library”
- Common Criteria TCG Protection Profile for “PC Client Specific TPM 2.0”
- European Union Commission Regulation 2019/424 (“ErP Lot 9”) “Ecodesign Requirements for Servers and Data Storage Products” Secure Data Deletion
- Optional FIPS 140-2 validated Self-Encrypting Disks (SEDs) with external KMIP-based key management

- **Product and Supply Chain Security**

- Suppliers validated through Lenovo’s Trusted Supplier Program
- Developed in accordance with Lenovo’s Secure Development Lifecycle (LSDL)
- Continuous firmware security validation through automated testing, including static code analysis, dynamic network and web vulnerability testing, software composition analysis, and subsystem-specific testing, such as UEFI security configuration validation
- Ongoing security reviews by US-based security experts, with attestation letters available from our third-party security partners
- Digitally signed firmware, stored and built on US-based infrastructure and signed on US-based Hardware Security Modules (HSMs)
- TAA (Trade Agreements Act) compliant manufacturing, by default in Mexico for North American markets with additional US and EU manufacturing options
- US 2019 NDAA (National Defense Authorization Act) Section 889 compliant

## Rack installation

The following table lists the rack installation options that are available for the SR665.

The VGA Upgrade Kit allows you to upgrade your server by adding a VGA video port to the front of the server (if the server does not already come with a front VGA port). When the front VGA is in use, the rear VGA port is automatically disabled.



Table 78. Rack installation options

| Option  | Feature Code | Description  |
|---|--------------|--|
| Optional front VGA port                       |              |  |
|   | BMJ9         | ThinkSystem 2U EIA Latch w/ VGA and External Diagnostics Port Upgrade Kit v2   |
| 4X97A12645                                    | B8ME         | ThinkSystem 2U EIA Latch w/ VGA and External Diagnostics Port Upgrade Kit (adds a VGA port to the front of the server) |
| Rail Kits                                     |              |  |
| 4M17A13564                                    | BK7W         | ThinkSystem Toolless Friction Rail v2  |
| 4M17A11754                                    | B8LA         | ThinkSystem Toolless Slide Rail Kit v2   |
| 4M17A11756                                    | B91Y         | ThinkSystem Toolless Slide Rail Kit v2 with 2U CMA   |
| Enhanced Rail Kits for > 34 kg server weight* |              |  |
| 4M17A11755                                    | B8LB         | ThinkSystem Toolless Slide Rail Kit v2 Enhanced  |
| 4M17A11757                                    | B97N         | ThinkSystem Toolless Slide Rail Kit v2 Enhanced with 2U CMA  |
| Separate Cable Management Arm                 |              |  |
| 7M27A05698                                    | B135         | ThinkSystem 2U CMA Upgrade Kit for Toolless Slide Rail   |

\* The Enhanced Slide Rail Kits are used when the server is shipped in a rack and the server is 34 kg or heavier (configuration with 20x 3.5-inch HDDs for example)

The following table summarizes the rail kit features and specifications.

Table 79. Rail kit features and specifications summary

| Option name   | ThinkSystem Toolless Friction Rail v2                                   | ThinkSystem Toolless Slide Rail Kit v2                                  | ThinkSystem Toolless Slide Rail Kit v2 Enhanced                         | ThinkSystem Toolless Slide Rail Kit v2 with 2U CMA                      | ThinkSystem Toolless Slide Rail Kit v2 Enhanced with 2U CMA             |
|---|---|---|---|---|---|
| Option part number  | 4M17A13564  | 4M17A11754  | 4M17A11755  | 4M17A11756  | 4M17A11757  |
| Rail type   | Half-out slide rail (friction)  | Full-out slide rail (ball bearing)                                      | Full-out slide rail (ball bearing)                                      | Full-out slide rail (ball bearing)                                      | Full-out slide rail (ball bearing)                                      |
| Toolless installation                                       | Yes   | Yes   | Yes   | Yes   | Yes   |
| CMA support   | No  | Optional, 7M27A05698*   | Optional, 7M27A05698*   | Included  | Included  |
| Supported rack type   | Four-post IBM and Lenovo standard rack, complying with the IEC standard | Four-post IBM and Lenovo standard rack, complying with the IEC standard | Four-post IBM and Lenovo standard rack, complying with the IEC standard | Four-post IBM and Lenovo standard rack, complying with the IEC standard | Four-post IBM and Lenovo standard rack, complying with the IEC standard |
| In-rack server maintenance                                  | No  | Yes   | Yes   | Yes   | Yes   |
| 1U PDU support  | Yes   | Yes   | Yes   | Yes   | Yes   |
| 0U PDU support  | Yes   | Limited support**   | Limited support**   | Limited support**   | Limited support**   |
| Supported mounting holes                                    | Square or round   | Square or round   | Square, round, or threaded  | Square or round   | Square, round, or threaded  |
| Thickness of mounting flanges                               | 2.0-3.3 mm (0.08-0.13 inches)   | 2.0-3.3 mm (0.08-0.13 inches)   | 2.0-3.3 mm (0.08-0.13 inches)   | 2.0-3.3 mm (0.08-0.13 inches)   | 2.0-3.3 mm (0.08-0.13 inches)   |
| Supported distance between front and rear mounting flanges‡ | 610-864 mm (24-34 inches)   | 610-813 mm (24-32 inches)   | 635-813 mm (25-32 inches)   | 610-813 mm (24-32 inches)   | 635-813 mm (25-32 inches)   |
| Rail length†  | 751 mm (29.6 inches)  | 740 mm (29.1 inches)  | 740 mm (29.1 inches)  | 820 mm (32.3 inches)  | 820 mm (32.3 inches)  |

\* CMA mounting brackets are not preinstalled on the rail. The CMA mounting brackets are contained in the CMA option kit package and you will need to install the CMA mounting brackets first. For detailed instructions, refer to the documentation that comes with the CMA option kit.

\*\* If you want to install the rails and a 0U PDU into the same rack, the rack must meet the height and depth requirements as described in [ThinkSystem Rail Support Matrix](#).

‡ For best performance, it is recommended that you install the rails to the racks with a 719-mm distance (28.31-inch, Lenovo rack default distance) between the front and rear mounting flanges.

† Measured when mounted on the rack, from the front surface of the front mounting flange to the rear most point of the rail. Rail is in closed position.

## Operating system support

The SR665 with EPYC 7003 processors supports the following operating systems:

- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Microsoft Windows Server 2022
- Red Hat Enterprise Linux 8.3
- Red Hat Enterprise Linux 8.4
- Red Hat Enterprise Linux 8.5
- SUSE Linux Enterprise Server 12 SP5
- SUSE Linux Enterprise Server 12 Xen SP5
- SUSE Linux Enterprise Server 15 SP2
- SUSE Linux Enterprise Server 15 SP3
- SUSE Linux Enterprise Server 15 Xen SP2
- SUSE Linux Enterprise Server 15 Xen SP3
- VMware ESXi 6.7 U3
- VMware ESXi 7.0 U1
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3

The SR665 with EPYC 7002 processors supports the following operating systems:

- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Microsoft Windows Server 2022
- Red Hat Enterprise Linux 7.6
- Red Hat Enterprise Linux 7.7
- Red Hat Enterprise Linux 7.8
- Red Hat Enterprise Linux 8.1
- Red Hat Enterprise Linux 8.2
- Red Hat Enterprise Linux 8.3
- Red Hat Enterprise Linux 8.4
- Red Hat Enterprise Linux 8.5
- SUSE Linux Enterprise Server 12 SP5
- SUSE Linux Enterprise Server 12 Xen SP5
- SUSE Linux Enterprise Server 15 SP1
- SUSE Linux Enterprise Server 15 SP2
- SUSE Linux Enterprise Server 15 SP3
- SUSE Linux Enterprise Server 15 Xen SP1
- SUSE Linux Enterprise Server 15 Xen SP2
- SUSE Linux Enterprise Server 15 Xen SP3
- VMware ESXi 6.7 U3
- VMware ESXi 7.0
- VMware ESXi 7.0 U1
- VMware ESXi 7.0 U2
- VMware ESXi 7.0 U3

For a complete list of supported, certified and tested operating systems, plus additional details and links to relevant web sites, see the Operating System Interoperability Guide:

- SR665 with EPYC 7003: <https://lenovopress.com/osig#servers=sr665-7d2w-7d2v-epyc-7003>
- SR665 with EPYC 7002: <https://lenovopress.com/osig#servers=sr665-7d2w-7d2v-epyc-7002>

For configure-to-order configurations, the server can be preloaded with VMware ESXi installed on M.2 cards. Ordering information is listed in the following table.

Table 80. VMware ESXi preload

| Feature code | Description  |
|--------------|--|
| B88T         | VMware ESXi 6.7 U3 (factory installed)               |
| BBZG         | VMware ESXi 7.0 (factory installed) (EPYC 7002 only) |
| BE5E         | VMware ESXi 7.0 U1 (Factory Installed)               |
| BHSR         | VMware ESXi 7.0 U2 (Factory Installed)               |

You can download supported VMware vSphere hypervisor images from the following web page and load it on the M.2 drives or 7mm drives using the instructions provided:

[https://vmware.lenovo.com/content/custom\\_iso/](https://vmware.lenovo.com/content/custom_iso/)

## Physical and electrical specifications

The SR665 has the following overall physical dimensions, excluding components that extend outside the standard chassis, such as EIA flanges, front security bezel (if any), and power supply handles:

- Width: 445 mm (17.5 inches)
- Height: 87 mm (3.4 inches)
- Depth: 764 mm (30.1 inches)

The following table lists the detailed dimensions. See the figure below for the definition of each dimension.

Table 81. Detailed dimensions

| Dimension  | Description  |
|--|--|
| 482 mm   | $X_a$ = Width, to the outsides of the front EIA flanges  |
| 435 mm   | $X_b$ = Width, to the rack rail mating surfaces  |
| 445 mm   | $X_c$ = Width, to the outer most chassis body feature  |
| 87 mm  | $Y_a$ = Height, from the bottom of chassis to the top of the chassis   |
| 698 mm   | $Z_a$ = Depth, from the rack flange mating surface to the rearmost I/O port surface                                      |
| 730 mm   | $Z_b$ = Depth, from the rack flange mating surface to the rearmost feature of the chassis body                           |
| 727 mm ( $\leq$ 1100W PSU)<br>755 mm (1800W PSU)<br>781 mm (2400W PSU) | $Z_c$ = Depth, from the rack flange mating surface to the rearmost feature such as power supply handle                   |
| 34 mm  | $Z_d$ = Depth, from the forwardmost feature on front of EIA flange to the rack flange mating surface                     |
| 46 mm  | $Z_e$ = Depth, from the front of security bezel (if applicable) or forwardmost feature to the rack flange mating surface |

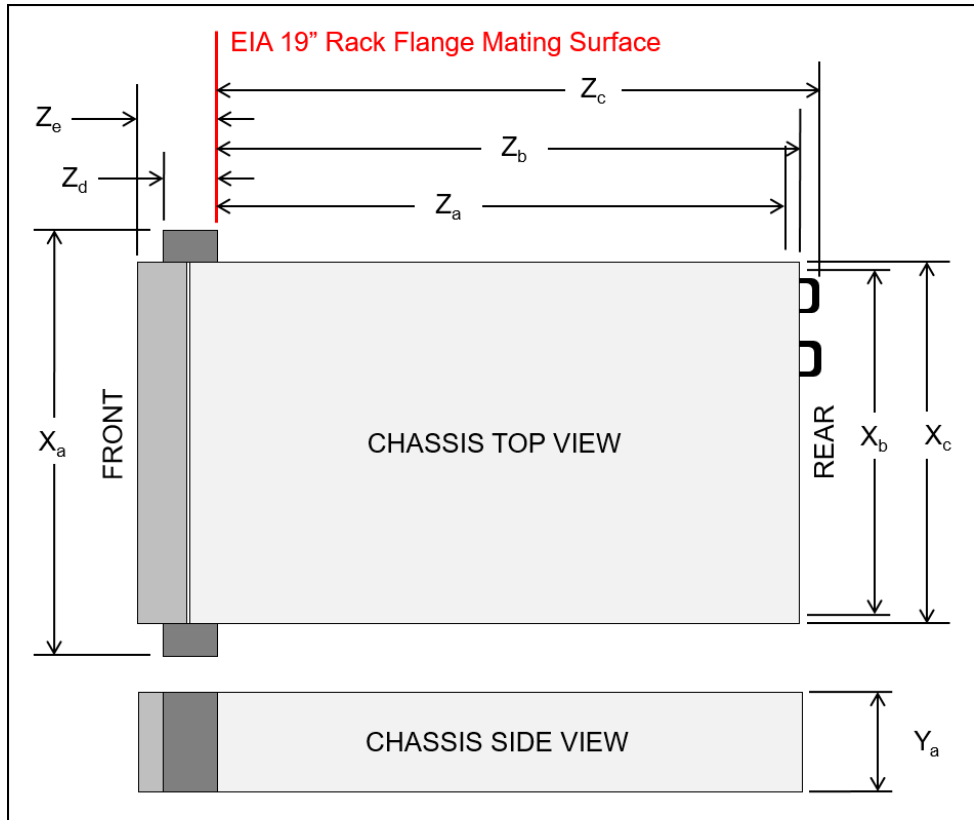


Figure 22. Server dimensions

The shipping dimensions (cardboard packaging) of the SR665 are as follows:

- Width: 592 mm (23.3 inches)
- Height: 282 mm (11.1 inches)
- Depth: 992 mm (39.1 inches)

The server has the following weight:

- Maximum weight: 38.8 kg (85.5 lb)

Electrical specifications for AC input power supplies:

- Input voltage:
  - 100 to 127 (nominal) Vac, 50 Hz or 60 Hz
  - 200 to 240 (nominal) Vac, 50 Hz or 60 Hz
  - 180 to 300 Vdc (China only)
- Inlet current:
  - 100-127 V:
    - 500W power supply: 5.7 A
    - 750W Platinum power supply: 8.4 A
    - 750W Titanium power supply: Not supported
    - 1100W power supply: 12 A\*
    - 1800W power supply: Not supported
  - 200-240 V:
    - 500W power supply: 2.7 A
    - 750W Platinum power supply: 4.1 A
    - 750W Titanium power supply: 4.0 A
    - 1100W power supply: 6.0 A

- 1800W power supply: 10 A

\* In China, this power supply cannot exceed 10 A current.

Electrical specifications for DC input power supply:

- Input voltage: -48 to -60 Vdc
- Inlet current (1100W power supply): 26 A

## Operating environment

The SR665 server complies with ASHRAE Class A2 specifications with most configurations, and depending on the hardware configuration, also complies with ASHRAE Class A3 and Class A4 specifications.

The restrictions to ASHRAE A2 (10-35°C) support are as follows:

- Mellanox ConnectX-6 adapters with Active Optical Cables (AOCs), ambient temperature cannot exceed 30°C
- With 8x 3.5-inch or 8x 2.5-inch or 16x 2.5-inch front drive bays + double-wide GPUs, ambient temperature cannot exceed 30°C
- With 8x 3.5-inch or 16x 2.5-inch front drive bays + NVIDIA T4 GPU, ambient temperature cannot exceed 30°C

To comply with ASHRAE A3 (5-40°C) and A4 (5-45°C) specifications, the server models must meet the following hardware configuration requirements:

- No Mellanox ConnectX-6 adapters
- No Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter, 4XC7A08240
- No GPUs
- No ≥170W TDP CPUs
- No NVMe PCIe AIC
- No ≥128G 3DS RDIMM
- Mid and rear drive support is per the tables below.

Mid and Rear drive support is listed in the following two tables. Note the for ASHRAE A2 support, there are some restrictions on the supported processors, based on the processor TDP value. These restrictions are indicated in the A2 Support column.

**Tip:** The configurations here match the ones described in the [Internal Storage](#) section.

Table 82. ASHRAE support based on drive bay configuration - 3.5-inch chassis (Blue = SAS/SATA, Purple = AnyBay, Red = NVMe) (S/S = SAS/SATA, Any = AnyBay)

| Cfg   | Front bays |             | Mid bays |          |           | Rear bays |          | A2 Support             | A3/A4 Support |
|---|------------|-------------|----------|----------|-----------|-----------|----------|------------------------|---------------|
|   | S/S 3.5"   | AnyBay 3.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |                        |               |
| <b>Configurations with 2 processors installed</b> |            |             |          |          |           |           |          |                        |               |
| A   | 8          | 0           | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| B   | 12         | 0           | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| C   | 12         | 0           | 0        | 0        | 0         | 2         | 0        | Supported (TDP ≤ 240W) | No support    |
| D   | 12         | 0           | 0        | 0        | 0         | 4         | 0        | Supported (TDP ≤ 240W) | No support    |
| E   | 12         | 0           | 4        | 0        | 0         | 4         | 0        | Supported (TDP ≤ 240W) | No support    |

| Cfg  | Front bays |             | Mid bays |          |           | Rear bays |          | A2 Support             | A3/A4 Support |
|--|------------|-------------|----------|----------|-----------|-----------|----------|------------------------|---------------|
|  | S/S 3.5"   | AnyBay 3.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |                        |               |
| F  | 12         | 0           | 0        | 0        | 0         | 0         | 4        | Supported (TDP ≤ 170W) | No support    |
| G  | 12         | 0           | 4        | 0        | 0         | 0         | 4        | Supported (TDP ≤ 170W) | No support    |
| H  | 12         | 0           | 0        | 0        | 8         | 0         | 0        | Supported              | No support    |
| I  | 0          | 12          | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| J  | 0          | 12          | 0        | 0        | 0         | 4         | 0        | Supported (TDP ≤ 240W) | No support    |
| K  | 0          | 12          | 4        | 0        | 0         | 4         | 0        | Supported (TDP ≤ 240W) | No support    |
| <b>Configurations with 1 processor installed</b> |            |             |          |          |           |           |          |                        |               |
| L  | 8          | 0           | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| M  | 12         | 0           | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| N  | 12         | 0           | 0        | 0        | 0         | 2         | 0        | Supported (TDP ≤ 240W) | No support    |
| O  | 12         | 0           | 0        | 0        | 0         | 4         | 0        | Supported (TDP ≤ 240W) | No support    |
| P  | 12         | 0           | 0        | 0        | 0         | 0         | 4        | Supported (TDP ≤ 170W) | No support    |

Table 83. ASHRAE support based on drive bay configuration - 2.5-inch chassis (Blue cells = SAS/SATA, Red cells = NVMe, Purple cells = AnyBay) (S/S = SAS/SATA, Any = AnyBay)

| Cfg   | Front bays |          |           | Mid bays |          |           | Rear bays |          | A2 Support             | A3/A4 Support |
|---|------------|----------|-----------|----------|----------|-----------|-----------|----------|------------------------|---------------|
|   | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |                        |               |
| <b>Configurations with 2 processors installed</b> |            |          |           |          |          |           |           |          |                        |               |
| A   | 8          | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| B   | 16         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| C   | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| D   | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 4        | Supported (TDP ≤ 170W) | No support    |
| E   | 24         | 0        | 0         | 0        | 8        | 0         | 0         | 4        | Supported (TDP ≤ 170W) | No support    |
| F   | 24         | 0        | 0         | 0        | 8        | 0         | 0         | 8        | Supported (TDP ≤ 170W) | No support    |
| G   | 0          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| H   | 0          | 0        | 16        | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| I   | 0          | 0        | 24        | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| J   | 0          | 0        | 24        | 0        | 0        | 8         | 0         | 0        | Supported              | No support    |
| K   | 8          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| L   | 16         | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| M   | 8          | 0        | 16        | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| N   | 0          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| O   | 0          | 8        | 8         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| P   | 8          | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| Q   | 16         | 8        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| R   | 16         | 8        | 0         | 0        | 0        | 0         | 0         | 4        | Supported (TDP ≤ 170W) | No support    |
| <b>Configurations with 1 processor installed</b>  |            |          |           |          |          |           |           |          |                        |               |
| S   | 8          | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |

| Cfg | Front bays |          |           | Mid bays |          |           | Rear bays |          | A2 Support             | A3/A4 Support |
|-----|------------|----------|-----------|----------|----------|-----------|-----------|----------|------------------------|---------------|
|     | S/S 2.5"   | Any 2.5" | NVMe 2.5" | S/S 3.5" | S/S 2.5" | NVMe 2.5" | S/S 3.5"  | S/S 2.5" |                        |               |
| T   | 16         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| U   | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |
| V   | 24         | 0        | 0         | 0        | 0        | 0         | 0         | 4        | Supported (TDP ≤ 170W) | No support    |
| W   | 0          | 0        | 8         | 0        | 0        | 0         | 0         | 0        | Supported              | Supported     |

## Temperature and humidity

The server is supported in the following environment:

- Air temperature:
  - Operating:
    - ASHRAE Class A2: 10°C to 35°C (50°F to 95°F); the maximum ambient temperature decreases by 1°C for every 300 m (984 ft) increase in altitude above 900 m (2,953 ft).
    - ASHRAE Class A3: 5°C to 40°C (41°F to 104°F); the maximum ambient temperature decreases by 1°C for every 175 m (574 ft) increase in altitude above 900 m (2,953 ft).
    - ASHRAE Class A4: 5°C to 45°C (41°F to 113°F); the maximum ambient temperature decreases by 1°C for every 125 m (410 ft) increase in altitude above 900 m (2,953 ft).
  - Server off: 5°C to 45°C (41°F to 113°F)
  - Shipment/storage: -40°C to 60°C (-40°F to 140°F)
- Maximum altitude: 3,050 m (10,000 ft)
- Relative Humidity (non-condensing):
  - Operating
    - ASHRAE Class A2: 8% to 80%; maximum dew point: 21°C (70°F)
    - ASHRAE Class A3: 8% to 85%; maximum dew point: 24°C (75°F)
    - ASHRAE Class A4: 8% to 90%; maximum dew point: 24°C (75°F)
  - Shipment/storage: 8% to 90%

## Heat output

The server generates the following heat:

- Heat/thermal output:
  - Minimum configuration: 825 BTU/hr, 242 W
  - Maximum configuration: 5715 BTU/hr, 1675 W

## Acoustical noise emissions

The server has the following acoustic noise emissions declaration:

- Sound power level ( $L_{WA,d}$ ):
  - Idling: 6.1 Bel (Typical), 6.7 Bel (GPU rich), 7.4 Bel (Storage rich)
  - Operating: 6.3 Bel (Typical), 8.0 Bel (GPU rich), 7.4 Bel (Storage rich)
- Sound pressure level ( $L_{pAm}$ ):
  - Idling: 43 dBA (Typical), 51 dBA (GPU rich), 56 dBA (Storage rich)
  - Operating: 46 dBA (Typical), 68 dBA (GPU rich), 56 dBA (Storage rich)

Notes:

- These sound levels were measured in controlled acoustical environments according to procedures specified by ISO7779 and are reported in accordance with ISO 9296.
- The declared acoustic sound levels are based on the configurations, which may change slightly depending on configuration/conditions, for example OCP cards such as the Broadcom 57454 and



the Marvell 41132 adapters.

- Typical: 2x 155W CPU, 32x 32GB RDIMM, 8x 2.5" HDD, 930-8i RAID, 10/25GbE SFP28 2-port OCP, 2x 750W PSU
- GPU rich: 2x 155W CPU, 32x 64GB RDIMM, 8x 2.5" HDD, 930-8i RAID, 10/25GbE SFP28 2-port OCP, 3x V100 GPU, 2x 1800W PSU
- Storage rich: 2x 155W CPU, 32x 64GB RDIMM, 20x 3.5" HDD, 930-16i RAID, 10/25GbE SFP28 2-port OCP, 2x 1100W PSU

### Shock and vibration

The server has the following vibration and shock limits:

- Vibration:
  - Operating: 0.21 G rms at 5 Hz to 500 Hz for 15 minutes across 3 axes
  - Non-operating: 1.04 G rms at 2 Hz to 200 Hz for 15 minutes across 6 surfaces
- Shock:
  - Operating: 15 G for 3 milliseconds in each direction (positive and negative X, Y, and Z axes)
  - Non-operating:
    - 23 kg - 31 kg: 35 G for 152 in./sec velocity change across 6 surfaces (3x GPU config, 2.5" config)
    - 32 kg - 68 kg: 35 G for 136 in./sec velocity change across 6 surfaces (20x 3.5" HDD config)

### Particulate contamination

Airborne particulates (including metal flakes or particles) and reactive gases acting alone or in combination with other environmental factors such as humidity or temperature might damage the system that might cause the system to malfunction or stop working altogether.

The following specifications indicate the limits of particulates that the system can tolerate:

- Reactive gases:
  - The reactivity rate of copper coupons shall be less than 200 Angstroms per month (Å/month)
  - The reactivity rate of silver coupons shall be less than 200 Å/month
- Airborne particulates:
  - The room air should be continuously filtered with MERV 8 filters.
  - Air entering a data center should be filtered with MERV 11 or preferably MERV 13 filters.
  - The deliquescent relative humidity of the particulate contamination should be more than 60% RH
  - Data centers must be free of zinc whiskers

For additional information, see the Specifications section of the Setup Guide for the server, available from the Lenovo ThinkSystem Information Center, <https://thinksystem.lenovofiles.com/help/index.jsp>

### Warranty and Support

The SR665 has a 1-year or 3-year warranty based on the machine type of the system:

- 7D2W - 1 year warranty
- 7D2V - 3 year warranty

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

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

- **Premier Support**

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

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

- **Warranty Upgrade (Preconfigured Support)**

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

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

- **Managed Services**

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

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

- **Technical Account Management (TAM)**

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

- **Enterprise Server Software Support**

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

- **YourDrive YourData**

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

- **Health Check**

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

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

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

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

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

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

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

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

## Services

Lenovo Services is a dedicated partner to your success. Our goal is to reduce your capital outlays, mitigate your IT risks, and accelerate your time to productivity.

**Note:** Some service options may not be available in all countries. For more information, go to <https://www.lenovo.com/services>. For information about Lenovo service upgrade offerings that are available in your region, contact your local Lenovo sales representative or business partner.

Here's a more in-depth look at what we can do for you:

- **Asset Recovery Services**

Asset Recovery Services (ARS) helps customers recover the maximum value from their end-of-life equipment in a cost-effective and secure way. On top of simplifying the transition from old to new equipment, ARS mitigates environmental and data security risks associated with data center equipment disposal. Lenovo ARS is a cash-back solution for equipment based on its remaining market value, yielding maximum value from aging assets and lowering total cost of ownership for your customers. For more information, see the ARS page, <https://lenovopress.com/lp1266-reduce-e-waste-and-grow-your-bottom-line-with-lenovo-ars>.

- **Assessment Services**

An Assessment helps solve your IT challenges through an onsite, multi-day session with a Lenovo technology expert. We perform a tools-based assessment which provides a comprehensive and thorough review of a company's environment and technology systems. In addition to the technology based functional requirements, the consultant also discusses and records the non-functional business requirements, challenges, and constraints. Assessments help organizations like yours, no matter how large or small, get a better return on your IT investment and overcome challenges in the ever-changing technology landscape.

- **Design Services**

Professional Services consultants perform infrastructure design and implementation planning to support your strategy. The high-level architectures provided by the assessment service are turned into low level designs and wiring diagrams, which are reviewed and approved prior to implementation. The implementation plan will demonstrate an outcome-based proposal to provide business capabilities through infrastructure with a risk-mitigated project plan.

- **Basic Hardware Installation**

Lenovo experts can seamlessly manage the physical installation of your server, storage, or networking hardware. Working at a time convenient for you (business hours or off shift), the technician will unpack and inspect the systems on your site, install options, mount in a rack cabinet, connect to power and network, check and update firmware to the latest levels, verify operation, and dispose of the packaging, allowing your team to focus on other priorities.

- **Deployment Services**

When investing in new IT infrastructures, you need to ensure your business will see quick time to value with little to no disruption. Lenovo deployments are designed by development and engineering teams who know our Products & Solutions better than anyone else, and our technicians own the process from delivery to completion. Lenovo will conduct remote preparation and planning, configure & integrate systems, validate systems, verify and update appliance firmware, train on administrative tasks, and provide post-deployment documentation. Customer's IT teams leverage our skills to enable IT staff to transform with higher level roles and tasks.

- **Integration, Migration, and Expansion Services**

Move existing physical & virtual workloads easily, or determine technical requirements to support increased workloads while maximizing performance. Includes tuning, validation, and documenting ongoing run processes. Leverage migration assessment planning documents to perform necessary migrations.

## Regulatory compliance

The server conforms to the following standards:

- Energy Star 3.0
- FCC: Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 6, Class A
- UL/IEC 62368-1
- CAN/CSA-C22.2 No. 62368-1
- NOM-019
- Argentina IEC 62368-1
- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 32, Class A; AS/NZS 60950.1
- IEC 60950-1 & IEC 62368-1 (CB Certificate and CB Test Report)
- China CCC (GB4943.1), GB9254 Class A, GB17625.1
- Taiwan BSMI CNS13438, Class A; CNS14336-1; section 5 of CNS15663
- Korea KN32, Class A; KN35
- Russia, Belorussia and Kazakhstan, EAC: TP TC 004/2011 (for Safety); TP TC 020/2011 (for EMC); TP EAC 037/2016 (for RoHS)
- CE Mark (EN55032 Class A, EN60950-1, EN62368-1, EN55024, EN55035, EN61000-3-2, (EU) 2019/424, EN 50581-1 and EN61000-3-3)
- CISPR 32, Class A
- TUV-GS (EN62368-1, EK1-ITB2000, AfPS GS 01 PAK Par. 3.1)
- India BIS certification

## External drive enclosures

The server supports attachment to external drive enclosures using a RAID controller with external ports or a SAS host bus adapter. Adapters supported by the server are listed in the [SAS adapters for external storage](#) section.

**Note:** Information provided in this section is for ordering reference purposes only. For the operating system and adapter support details, refer to the interoperability matrix for a particular storage enclosure that can be found on the Lenovo Data Center Support web site:

<http://datacentersupport.lenovo.com>

Table 84. External drive enclosures

| Description  | Part number |         |         |
|--|-------------|---------|---------|
|  | Worldwide   | Japan   | PRC     |
| Lenovo Storage D1212 LFF Disk Expansion with Dual SAS IO Modules | 4587A11     | 4587A1J | 4587A1C |
| Lenovo Storage D1224 SFF Disk Expansion with Dual SAS IO Modules | 4587A31     | 4587A3J | 4587A3C |
| Lenovo Storage D3284 4TB x 84 HD Expansion Enclosure             | 641311F     |         |         |
| Lenovo Storage D3284 6TB x 84 HD Expansion Enclosure             | 641312F     |         |         |
| Lenovo Storage D3284 8TB x 84 HD Expansion Enclosure             | 641313F     |         |         |
| Lenovo Storage D3284 10TB x 84 HD Expansion Enclosure            | 641314F     |         |         |

For details about supported drives, adapters, and cables, see the following Lenovo Press Product Guides:

- Lenovo Storage D1212 and D1224  
<http://lenovopress.com/lp0512>
- Lenovo Storage D3284  
<http://lenovopress.com/lp0513>

## External storage systems

Lenovo offers the ThinkSystem DE Series and ThinkSystem DM Series external storage systems for high-performance storage. See the DE Series and DM Series product guides for specific controller models, expansion enclosures and configuration options:

- ThinkSystem DE Series Storage  
<https://lenovopress.com/storage/thinksystem/de-series#rt=product-guide>
- ThinkSystem DM Series Storage  
<https://lenovopress.com/storage/thinksystem/dm-series#rt=product-guide>

## External backup units

The server supports both USB-attached RDX backup units and SAS-attached tape drives.

The following table lists the available external SAS tape backup options.

**Tip:** Verify the end-to-end support of an IBM tape backup solution through the IBM System Storage Interoperation Center (SSIC): <http://www.ibm.com/systems/support/storage/ssic>

Table 85. External SAS backup options

| Part number                               | Description                              |
|---|--|
| External SAS tape backup drives           |  |
| 6160S6E                                   | IBM TS2260 Tape Drive Model H6S          |
| 6160S7E                                   | IBM TS2270 Tape Drive Model H7S          |
| 6160S8E                                   | IBM TS2280 Tape Drive Model H8S          |
| External SAS tape backup autoloaders      |  |
| 6171S6R                                   | IBM TS2900 Tape Autoloader w/LTO6 HH SAS |
| 6171S7R                                   | IBM TS2900 Tape Autoloader w/LTO7 HH SAS |
| 6171S8R                                   | IBM TS2900 Tape Autoloader w/LTO8 HH SAS |
| External tape backup libraries            |  |
| 6741A1F                                   | IBM TS4300 3U Tape Library-Base Unit     |
| SAS backup drives for TS4300 Tape Library |  |
| 01KP934                                   | LTO 6 HH SAS Drive                       |
| 01KP937                                   | LTO 7 HH SAS Drive                       |
| 01KP953                                   | LTO 8 HH SAS Drive                       |

For more information, see the list of Product Guides in the Backup units category:  
<https://lenovopress.com/servers/options/backup>

The following table lists the external RDX backup options available.

Table 86. External RDX dock and cartridges

| Part number        | Feature code | Description  |
|--------------------|--------------|--|
| External RDX docks |              |  |
| 4T27A10725         | B32R         | ThinkSystem RDX External USB 3.0 Dock (No cartridge included with the drive) |
| Cartridges         |              |  |
| 7TP7A01601         | AVF8         | ThinkSystem RDX 500GB Cartridge  |
| 7TP7A01602         | AVF1         | ThinkSystem RDX 1TB Cartridge  |
| 7TP7A01603         | AVF0         | ThinkSystem RDX 2TB Cartridge  |
| 7TP7A04318         | AXD1         | ThinkSystem RDX 4TB Cartridge  |

For more information, see the Lenovo RDX USB 3.0 Disk Backup Solution product guide:  
<https://lenovopress.com/tips0894-rdx-usb-30>

## Fibre Channel SAN switches

Lenovo offers the ThinkSystem DB Series of Fibre Channel SAN switches for high-performance storage expansion. See the DB Series product guides for models and configuration options:

- ThinkSystem DB Series SAN Switches:  
<https://lenovopress.com/storage/switches/rack#rt=product-guide>

## Uninterruptible power supply units

The following table lists the uninterruptible power supply (UPS) units that are offered by Lenovo.

Table 87. Uninterruptible power supply units

| Part number | Description  |
|-------------|--|
| 55941AX     | RT1.5kVA 2U Rack or Tower UPS (100-125VAC)   |
| 55941KX     | RT1.5kVA 2U Rack or Tower UPS (200-240VAC)   |
| 55942AX     | RT2.2kVA 2U Rack or Tower UPS (100-125VAC)   |
| 55942KX     | RT2.2kVA 2U Rack or Tower UPS (200-240VAC)   |
| 55943AX     | RT3kVA 2U Rack or Tower UPS (100-125VAC)   |
| 55943KX     | RT3kVA 2U Rack or Tower UPS (200-240VAC)   |
| 55945KX     | RT5kVA 3U Rack or Tower UPS (200-240VAC)   |
| 55946KX     | RT6kVA 3U Rack or Tower UPS (200-240VAC)   |
| 55948KX     | RT8kVA 6U Rack or Tower UPS (200-240VAC)   |
| 55949KX     | RT11kVA 6U Rack or Tower UPS (200-240VAC)  |
| 55948PX     | RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)   |
| 55949PX     | RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC)  |
| 55943KT†    | ThinkSystem RT3kVA 2U Standard UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)    |
| 55943LT†    | ThinkSystem RT3kVA 2U Long Backup UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets) |
| 55946KT†    | ThinkSystem RT6kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)          |
| 5594XKT†    | ThinkSystem RT10kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)         |

† Only available in China and countries in the Asia Pacific region.

For more information, see the list of Product Guides in the UPS category:

<https://lenovopress.com/servers/options/ups>



## Power distribution units

The following table lists the power distribution units (PDUs) that are offered by Lenovo.

Table 88. Power distribution units

| Part number  | Description   |
|--|---|
| <b>0U Basic PDUs</b>   |   |
| 00YJ776  | 0U 36 C13/6 C19 24A/200-240V 1 Phase PDU with NEMA L6-30P line cord                       |
| 00YJ777  | 0U 36 C13/6 C19 32A/200-240V 1 Phase PDU with IEC60309 332P6 line cord                    |
| 00YJ778  | 0U 21 C13/12 C19 32A/200-240V/346-415V 3 Phase PDU with IEC60309 532P6 line cord          |
| 00YJ779  | 0U 21 C13/12 C19 48A/200-240V 3 Phase PDU with IEC60309 460P9 line cord                   |
| <b>Switched and Monitored PDUs</b>   |   |
| 00YJ780  | 0U 20 C13/4 C19 Switched and Monitored 32A/200-240V/1Ph PDU w/ IEC60309 332P6 line cord   |
| 00YJ781  | 0U 20 C13/4 C19 Switched and Monitored 24A/200-240V/1Ph PDU w/ NEMA L6-30P line cord      |
| 00YJ782  | 0U 18 C13/6 C19 Switched / Monitored 32A/200-240V/346-415V/3Ph PDU w/ IEC60309 532P6 cord |
| 00YJ783  | 0U 12 C13/12 C19 Switched and Monitored 48A/200-240V/3Ph PDU w/ IEC60309 460P9 line cord  |
| 46M4003  | 1U 9 C19/3 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord       |
| 46M4004  | 1U 12 C13 Switched and Monitored DPI PDU (without line cord)                              |
| 46M4005  | 1U 12 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord            |
| <b>Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)</b> |   |
| 71762NX  | Ultra Density Enterprise C19/C13 PDU Module (without line cord)                           |
| 71763NU  | Ultra Density Enterprise C19/C13 PDU 60A/208V/3ph with IEC 309 3P+Gnd line cord           |
| <b>C13 Enterprise PDUs (12x IEC 320 C13 outlets)</b>                           |   |
| 39M2816  | DPI C13 Enterprise PDU+ (without line cord)   |
| 39Y8941  | DPI Single Phase C13 Enterprise PDU (without line cord)                                   |
| <b>C19 Enterprise PDUs (6x IEC 320 C19 outlets)</b>                            |   |
| 39Y8948  | DPI Single Phase C19 Enterprise PDU (without line cord)                                   |
| 39Y8923  | DPI 60A 3 Phase C19 Enterprise PDU with IEC 309 3P+G (208 V) fixed line cord              |
| <b>Front-end PDUs (3x IEC 320 C19 outlets)</b>                                 |   |
| 39Y8938  | DPI 30amp/125V Front-end PDU with NEMA L5-30P line cord                                   |
| 39Y8939  | DPI 30amp/250V Front-end PDU with NEMA L6-30P line cord                                   |
| 39Y8934  | DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd line cord                                |
| 39Y8940  | DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd line cord                                |
| 39Y8935  | DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd line cord                                |
| <b>NEMA PDUs (6x NEMA 5-15R outlets)</b>                                       |   |
| 39Y8905  | DPI 100-127V PDU with Fixed NEMA L5-15P line cord   |
| <b>Line cords for PDUs that ship without a line cord</b>                       |   |
| 40K9611  | DPI 32a Line Cord (IEC 309 3P+N+G)  |
| 40K9612  | DPI 32a Line Cord (IEC 309 P+N+G)   |
| 40K9613  | DPI 63a Cord (IEC 309 P+N+G)  |
| 40K9614  | DPI 30a Line Cord (NEMA L6-30P)   |
| 40K9615  | DPI 60a Cord (IEC 309 2P+G)   |

| Part number | Description                      |
|-------------|----------------------------------|
| 40K9617     | DPI Australian/NZ 3112 Line Cord |
| 40K9618     | DPI Korean 8305 Line Cord        |

For more information, see the Lenovo Press documents in the PDU category:  
<https://lenovopress.com/servers/options/pdu>

## Rack cabinets

The following table lists the supported rack cabinets.

Table 89. Rack cabinets

| Part number | Description                       |
|-------------|-----------------------------------|
| 93072RX     | 25U Standard Rack                 |
| 93072PX     | 25U Static S2 Standard Rack       |
| 93634PX     | 42U 1100mm Dynamic Rack           |
| 93634EX     | 42U 1100mm Dynamic Expansion Rack |
| 93604PX     | 42U 1200mm Deep Dynamic Rack      |
| 93614PX     | 42U 1200mm Deep Static Rack       |
| 93084EX     | 42U Enterprise Expansion Rack     |
| 93084PX     | 42U Enterprise Rack               |
| 93074RX     | 42U Standard Rack                 |

For specifications about these racks, see the Lenovo Rack Cabinet Reference, available from:  
<https://lenovopress.com/lp1287-lenovo-rack-cabinet-reference>

For more information, see the list of Product Guides in the Rack cabinets category:  
<https://lenovopress.com/servers/options/racks>

## KVM console options

The following table lists the supported KVM consoles.

Table 90. KVM console

| Part number | Description   |
|-------------|---|
| 4XF7A73009  | ThinkSystem 18.5" LCD Console (with English keyboard) |

The following table lists the available KVM switches and the options that are supported with them.

Table 92. KVM switches and options

| Part number  | Description   |
|--|---|
| KVM Console switches   |   |
| 1754D1T  | ThinkSystem Digital 2x1x16 KVM Switch (DVI video output port) |
| 1754A1T  | ThinkSystem Analog 1x8 KVM Switch (DVI video output port)     |
| 1754D2X  | Global 4x2x32 Console Manager (GCM32)                         |
| 1754D1X  | Global 2x2x16 Console Manager (GCM16)                         |
| 1754A2X  | Local 2x16 Console Manager (LCM16)                            |
| 1754A1X  | Local 1x8 Console Manager (LCM8)                              |
| Cables for ThinkSystem Digital and Analog KVM Console switches |   |
| 4X97A11108   | ThinkSystem VGA to DVI Conversion Cable                       |
| 4X97A11109   | ThinkSystem Single-USB Conversion Cable for Digital KVM       |
| 4X97A11107   | ThinkSystem Dual-USB Conversion Cable for Digital KVM         |
| 4X97A11106   | ThinkSystem USB Conversion Cable for Analog KVM               |
| Cables for GCM and LCM Console switches                        |   |
| 46M5383  | Virtual Media Conversion Option Gen2 (VCO2)                   |
| 46M5382  | Serial Conversion Option (SCO)                                |

For more information, see the list of Product Guides in the KVM Switches and Consoles category:

<http://lenovopress.com/servers/options/kvm>

## Lenovo Financial Services

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

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

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

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

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

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

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

## Related publications and links

For more information, see these resources:

- ThinkSystem SR665 product page:  
<https://www.lenovo.com/us/en/data-center/servers/racks/ThinkSystem-SR665-Server/p/77XX7SR552S>
- ThinkSystem SR665 datasheet  
<https://lenovopress.com/DS0109>
- Interactive 3D Tour of the ThinkSystem SR665:  
<https://lenovopress.com/lp1291>
- Lenovo Press video walk-through of the ThinkSystem SR665:  
<https://lenovopress.com/lp1293>
- ThinkSystem SR665 drivers and support  
<http://datacentersupport.lenovo.com/products/servers/thinksystem/sr665/7d2v/downloads>
- Lenovo Hardware Installation & Removal Videos on the SR665:
  - YouTube: [https://www.youtube.com/playlist?list=PLYV5R7hVcs-Bz2XleLEfGcrLGm9TSY\\_yt](https://www.youtube.com/playlist?list=PLYV5R7hVcs-Bz2XleLEfGcrLGm9TSY_yt)
  - Youku: [http://list.youku.com/albumlist/show/id\\_52339612.html](http://list.youku.com/albumlist/show/id_52339612.html)
- Lenovo ThinkSystem SR665 product publications:  
<http://thinksystem.lenovofiles.com/help/index.jsp>
  - Quick Start
  - Rack Installation Guide
  - Setup Guide
  - Hardware Maintenance Manual
  - Messages and Codes Reference
  - Memory Population Reference
- ServerProven hardware compatibility:  
<http://www.lenovo.com/us/en/serverproven>

## Related product families

Product families related to this document are the following:

- [2-Socket Rack Servers](#)
- [ThinkSystem SR665 Server](#)

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