

ThinkSystem M.2 Drives and M.2 Adapters

Product Guide

M.2 is a solid-state drive (SSD) form factor primarily used as an operating system boot solution however depending on the endurance of the M.2 drives, they may also be suitable for read-intensive or mixed workloads.

Lenovo ThinkSystem servers support M.2 drives in one of three ways, depending on the server selected:

- One or two drives, mounted in an M.2 adapter, vertically in a dedicated slot
- Two or four drives, mounted horizontally in an M.2 adapter
- Installed directly on the system board

One example is the Dual M.2 Adapter, as shown in the following figure, with one 128GB M.2 drive partially inserted. The second M.2 drive is installed on the other side of the adapter.



Figure 1. Dual M.2 Adapter and a 128 GB M.2 drive

Did you know?

The Dual M.2 Adapter features a Lenovo patented design that provides a tool-less method for attaching back-to-back M.2 modules to the adapter.

The Dual M.2 Adapter and SATA RAID M.2 Module include a built-in RAID controller and allows two installed M.2 drives to be configured either as RAID-1, RAID-0, or two independent drives (JBOD mode).

Part number information

The following tables list the ThinkSystem part numbers.

Table 1. M.2 adapters

Part number	Feature code	Description
M.2 adapters (ThinkSystem servers with Intel Xeon Scalable processors)		
7Y37A01092	AUMU	ThinkSystem M.2 Enablement Kit (contains the Single M.2 Adapter; supports 1 drive)
7Y37A01093	AUMV	ThinkSystem M.2 with Mirroring Enablement Kit (contains the Dual M.2 Adapter, supports 1 or 2 drives with RAID)
4M17A60519	B88P	ThinkSystem SE350 M.2 Mirroring Enablement Kit (contains the Dual M.2 Adapter, supports 1 or 2 drives with RAID)
M.2 modules (SR635 and SR655 only)		
4Y37A09739	B5XH	ThinkSystem M.2 SATA 2-Bay RAID Enablement Kit (supports 2 SATA drives with RAID)
4Y37A09738	B5XJ	ThinkSystem M.2 SATA/NVMe 2-Bay Enablement Kit (supports 2 SATA or 2 NVMe drives, no RAID)
M.2 adapter (SE350 only)		
4M17A37281	B6FF	ThinkSystem SE350 M.2 SATA/NVMe 4-bay Data Drive Enablement Kit (supports 4 SATA or 4 NVMe drives, no RAID)
M.2 thermal kit (some servers)		
4XH7A08791	B31F	ThinkSystem M.2 480GB SSD Thermal Kit (contains an air baffle required by some server configurations)

Table 2. M.2 drives

Part number	Feature code	Description
SATA drives		
7N47A00129	AUUL	ThinkSystem M.2 32GB SATA 6Gbps Non-Hot-Swap SSD
7N47A00130	AUUV	ThinkSystem M.2 128GB SATA 6Gbps Non-Hot-Swap SSD
Micron 5100 SATA drives (non-SED)		
4XB7A14049	B5S4	ThinkSystem M.2 5100 240GB SATA 6Gbps Non-Hot Swap SSD
7SD7A05703	B11V	ThinkSystem M.2 5100 480GB SATA 6Gbps Non-Hot-Swap SSD
4XB7A14048	B5UP	ThinkSystem M.2 5100 960GB SATA 6Gbps Non-Hot Swap SSD
4XB7A39425	B75B	ThinkSystem M.2 1.92TB 5100 Pro SATA 6Gbps Non-Hot Swap SSD
Micron 5100 SATA SED drives (TCG-e encryption)		
4XB7A37273	B6FM	ThinkSystem M.2 480GB 5100 Pro SATA 6Gbps Non-Hot Swap SED SSD
4XB7A37274	B6FN	ThinkSystem M.2 960GB 5100 Pro SATA 6Gbps Non-Hot Swap SED SSD
4XB7A37275	B6FP	ThinkSystem M.2 1.92TB 5100 Pro SATA 6Gbps Non-Hot Swap SED SSD
ATP A600i Industrial SATA drives (non-SED)		
4XB7A39422	B758	ThinkSystem M.2 120GB Industrial A600i SATA SSD
4XB7A39423	B759	ThinkSystem M.2 480GB Industrial A600i SATA SSD
4XB7A39424	B75A	ThinkSystem M.2 800GB Industrial A600i SATA SSD
ATP A600i Industrial SATA SED drives (Opal encryption)		

Part number	Feature code	Description
4XB7A37270	B6FT	ThinkSystem M.2 120GB Industrial A600i SATA SED SSD
4XB7A37271	B6FK	ThinkSystem M.2 480GB Industrial A600i SATA SED SSD
4XB7A37272	B6FL	ThinkSystem M.2 800GB Industrial A600i SATA SED SSD
Intel P4511 SATA drives (non-SED)		
4XB7A37276	B6FQ	ThinkSystem SE350 Edge Server - M.2 650GB P4511 NVMe High Endurance SSD
4XB7A37277	B6FR	ThinkSystem SE350 Edge Server - M.2 1TB P4511 NVMe SSD
4XB7A37278	B6FS	ThinkSystem SE350 Edge Server - M.2 2TB P4511 NVMe SSD
Intel P4511 SATA SED drives (Opal encryption)		
4XB7A39426	B75C	ThinkSystem M.2 650GB P4511 NVMe SED High Endurance SSD
4XB7A39427	B75D	ThinkSystem M.2 1TB P4511 NVMe SED SSD
4XB7A39428	B75E	ThinkSystem M.2 2TB P4511 NVMe SED SSD\

Implementation

Implementation of M.2 in ThinkSystem servers is one of four ways:

- On the ThinkSystem SR150, SR250 and ST250, a single M.2 drive is installed directly on the system board.
- On ThinkSystem servers, including those with first or second-generation Intel Xeon Scalable processors, the M.2 drives install into an M.2 adapter which in turn is installed in a dedicated slot in the server. With two M.2 drives configured, the drives are configured by default as a RAID-1 mirrored pair for redundancy. There are two M.2 adapters supported:
 - Single M.2 Adapter, which supports one M.2 drive; available as the ThinkSystem M.2 Enablement Kit
 - Dual M.2 Adapter, which supports one or two M.2 drives; available as the ThinkSystem M.2 with Mirroring Enablement Kit. Includes a built-in RAID controller and allows two installed M.2 drives to be configured either as RAID-1, RAID-0, or two independent drives (JBOD mode).

The Single M.2 Adapter is shown in the following photo, with the 32GB M.2 drive installed.



Figure 2. Single M.2 Adapter and a 32 GB M.2 drive

- On the SR655 and SR635, an M.2 module is mounted horizontally and is cabled to the system board. There are two M.2 modules offered:
 - SATA RAID M.2 Module, which supports two SATA M.2 drives and supports RAID functionality; available as the ThinkSystem M.2 SATA 2-Bay RAID Enablement Kit
 - SATA/NVMe M.2 Module, which supports two SATA or two NVMe M.2 drives (no RAID); available as the ThinkSystem M.2 SATA/NVMe 2-Bay Enablement Kit

The following figure shows the SATA/NVMe M.2 Module with two 128 GB M.2 drives installed. Note that the production M.2 Module will have a green circuit board, not the red color as shown here.



Figure 3. SATA/NVMe M.2 Module with 2 drives

- On the ThinkSystem SE350 edge server, the M.2 drives are mounted on a 4-drive adapter that plugs into the PCIe riser.

Tip: The M.2 adapters and modules are also referred to as enablement kits. In the product publications, they are referred to as M.2 backplanes. These terms are interchangeable.

Features

Features of the ThinkSystem M.2 solution:

- Hardened boot media that does not use a drive bay
- Both mechanically & electronically designed to be more robust than any prior implementation
- Design provides hardware mirroring of two M.2 SSDs
- M.2 SSDs have higher mean time between failures (MTBF) than SD cards or USB keys
- Tool-less clip design that supports back to back connector layout, providing simple install in limited space.
- When using configure-to-order (CTO), you can also select zero drives and add drives as a field upgrade.

Features of the Dual M.2 Adapter:

- PCIe 2.0 x2 host interface (connects to the PCH)
- Based on the Marvell 88SE9230 6 Gbps SATA controller
- Supports one or two 6 Gbps SATA M.2 drives
- Support 42mm, 60mm and 80mm drive form factors (2242, 2260 and 2280 respectively)
- RAID functionality provided by the M.2 adapter
- RAID 1 by default; also supports RAID 0 and JBOD
- UEFI-based settings to enable/disable RAID mode and to review inventory
- Supports Secure Boot
- Adapter and drive firmware update using Lenovo firmware tools
- Management via I2C interface

Features of the Single M.2 Adapter:

- 6 Gbps SATA host interface (connects to the PCH)
- Supports one 6 Gbps SATA M.2 drive
- Support 42mm, 60mm and 80mm drive form factors (2242, 2260 and 2280 respectively)
- Drive firmware update using Lenovo firmware tools
- Management via I2C interface
- VPD reporting of adapter inventory

The SATA RAID Enablement Kit for the SR635 and SR655 has the following features:

- Supports one or two SATA M.2 drives
- Support 42mm, 60mm and 80mm drive form factors (2242, 2260 and 2280 respectively)
- 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 SATA/NVMe Enablement Kit for the SR635 and SR655 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 and 80mm drive form factors (2242, 2260 and 2280 respectively)
- JBOD support only; no RAID support
- Either 6Gbps SATA or PCIe 3.0 x4 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

The ThinkSystem SE350 M.2 SATA/NVMe 4-bay Data Drive Enablement Kit has the following features:

- Supports four SATA or four NVMe M.2 drives (no mixing of drive types)
- Support 42mm, 60mm, 80mm and 110mm drive form factors (2242, 2260, 2280 and 22110 respectively)
- For SATA drives, RAID 0, 1, 5, 10, provided by the PCH controller in the processor
- For NVMe, JBOD support only; no RAID support
- Either 6Gbps SATA or PCIe 3.0 x4 interface to the drives depending on the drives installed

Tip: 2242, 2260, 2280 and 22110 are the industry terms for the M.2 drive dimensions. For example, 2280 corresponds to a drive that is 22mm wide and 80mm long.

Technical specifications of the drives

The following table compares the performance specifications of the M.2 drives

Table 3. M.2 performance specifications

Part number	Description	Endurance DWPD	Endurance TBW	IOPS reads	IOPS writes	Sequential read rate	Sequential write rate	Read latency	Write latency
Lite-On									
7N47A00129	32GB SATA (CV1)	0.66 DWPD	37.92TB	25,000 IOPS	10,500 IOPS	260 MB/s	40 MB/s	N/A	N/A
7N47A00130	128GB SATA (CV8)	0.28 DWPD	63.9 TB	42,000 IOPS	2,300 IOPS	500 MB/s	140 MB/s	N/A	N/A
Micron 5100 (Non-SED)									
4XB7A14049	5100 240 GB SATA	1.5 DWPD	650 TB	78,000 IOPS	26,000 IOPS	540 MB/s	250 MB/s	500 µs	500 µs
7SD7A05703	5100 480GB SATA	1.5 DWPD	1,300 TB	93,000 IOPS	43,000 IOPS	540 MB/s	410 MB/s	500 µs	500 µs
4XB7A14048	5100 960GB SATA	2.5 DWPD	4,400 TB	93,000 IOPS	37,000 IOPS	540 MB/s	520 MB/s	500 µs	500 µs
4XB7A39425	1.92TB 5100 SATA	2.5 DWPD	8,800 TB	93,000 IOPS	37,000 IOPS	540 MB/s	520 MB/s	500 µs	500 µs
Micron 5100 SED (TCP-e Encryption)									
4XB7A37273	480GB 5100 SATA SED	1.5 DWPD	1,300 TB	93,000 IOPS	43,000 IOPS	540 MB/s	410 MB/s	500 µs	500 µs
4XB7A37274	960GB 5100 SATA SED	2.5 DWPD	4,400 TB	93,000 IOPS	37,000 IOPS	540 MB/s	520 MB/s	500 µs	500 µs
4XB7A37275	1.92TB 5100 SATA SED	2.5 DWPD	8,800 TB	93,000 IOPS	37,000 IOPS	540 MB/s	520 MB/s	500 µs	500 µs
ATP Industrial A600i (non-SED)									
4XB7A39422	120GB A600i SATA	0.2 DWPD	48 TB	45,000 IOPS	32,500 IOPS	560 MB/s	125 MB/s	N/A	N/A
4XB7A39423	480GB A600i SATA	0.4 DWPD	384 TB	100,200 IOPS	82,800 IOPS	560 MB/s	390 MB/s	N/A	N/A
4XB7A39424	800GB A600i SATA	0.5 DWPD	768 TB	97,400 IOPS	78,600 IOPS	560 MB/s	370 MB/s	N/A	N/A
ATP Industrial A600i SED (Opal Encryption)									
4XB7A37270	120GB A600i SATA SED	0.2 DWPD	48 TB	45,000 IOPS	32,500 IOPS	560 MB/s	125 MB/s	N/A	N/A
4XB7A37271	480GB A600i SATA SED	0.4 DWPD	384 TB	100,200 IOPS	82,800 IOPS	560 MB/s	390 MB/s	N/A	N/A
4XB7A37272	800GB A600i SATA SED	0.5 DWPD	768 TB	97,400 IOPS	78,600 IOPS	560 MB/s	370 MB/s	N/A	N/A
Intel P4511 SED (Opal Encryption)									
4XB7A39426	650GB P4511 NVMe SED	3.0 DWPD	3900 TB	295,000 IOPS	31,000 IOPS	2000 MB/s	1050 MB/s	85 µs	40 µs
4XB7A39427	1TB P4511 NVMe SED	0.5 DWPD	980 TB	295,000 IOPS	31,000 IOPS	2000 MB/s	1050 MB/s	85 µs	40 µs
4XB7A39428	2TB P4511 NVMe SED	0.5 DWPD	1950 TB	295,000 IOPS	36,000 IOPS	2000 MB/s	1050 MB/s	85 µs	40 µs

Server support

The following table lists the servers that are compatible.

Table 4. server support

Description and part number	E		1S Intel				2S Intel						AMD		4S Intel			Dense/ Blade				
	SE350 (7Z46 / 7D1X)	ST50 (7Y48/7Y50)	ST250 (7Y45/7Y46)	SR150 (7Y54)	SR250 (7Y51/7Y52)	ST550 (7X09/7X10)	SR530 (7X07/7X08)	SR550 (7X03/7X04)	SR570 (7Y02/7Y03)	SR590 (7X98/7X99)	SR630 (7X01/7X02)	SR650 (7X05/7X06)	SR670 (7Y36/7Y37/7Y38)	SR635 (7Y98 / 7Y99)	SR655 (7Y00 / 7Z01)	SR850 (7X18/7X19)	SR860 (7X69/7X70)	SR950 (7X11/12/13)	SD530 (7X21)	SD650 (7X58)	SN550 (7X16)	SN850 (7X15)
M.2 adapters and modules																						
M.2 Enablement Kit, 7Y37A01092	Y	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y†	Y
M.2 with Mirroring Enablement Kit, 7Y37A01093	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
SE350 M.2 Mirroring Enablement Kit, 4M17A60519	Y*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 SATA 2-Bay RAID Enablement Kit, 4Y37A09739	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N
M.2 SATA/NVMe 2-Bay Enablement Kit, 4Y37A09738	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N
SE350 M.2 SATA/NVMe 4-bay Data Drive Enablement Kit, 4M17A37281	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 thermal kit																						
M.2 480GB SSD Thermal Kit, 4XH7A08791	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N
Lite-On SATA drives																						
M.2 32GB SATA 6Gbps SSD, 7N47A00129	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y
M.2 128GB SATA 6Gbps SSD, 7N47A00130	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Micron 5100 SATA drives (non-SED)																						
M.2 5100 240GB SATA 6Gbps SSD, 4XB7A14049	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y
M.2 5100 480GB SATA 6Gbps SSD, 7SD7A05703	Y	N	Y	Y	Y	Y	Y	Y†	Y	Y†	Y	Y†	N	Y	Y	Y	Y	Y	Y	N	Y	Y
M.2 5100 960GB SATA 6Gbps SSD, 4XB7A14048	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N
M.2 1.92TB 5100 Pro SATA 6Gbps SSD, 4XB7A39425	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Micron 5100 SATA SED drives (TCG-e encryption)																						
M.2 480GB 5100 Pro SATA 6Gbps SED SSD, 4XB7A37273	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Description and part number	E	1S Intel				2S Intel								AMD	4S Intel			Dense/ Blade				
	SE350 (7Z46 / 7D1X)	ST50 (7Y48/7Y50)	ST250 (7Y45/7Y46)	SR150 (7Y54)	SR250 (7Y51/7Y52)	ST550 (7X09/7X10)	SR530 (7X07/7X08)	SR550 (7X03/7X04)	SR570 (7Y02/7Y03)	SR590 (7X98/7X99)	SR630 (7X01/7X02)	SR650 (7X05/7X06)	SR670 (7Y36/7Y37/7Y38)	SR635 (7Y98 / 7Y99)	SR655 (7Y00 / 7Z01)	SR850 (7X18/7X19)	SR860 (7X69/7X70)	SR950 (7X11/12/13)	SD530 (7X21)	SD650 (7X58)	SN550 (7X16)	SN850 (7X15)
M.2 960GB 5100 Pro SATA 6Gbps SED SSD, 4XB7A37274	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 1.92TB 5100 Pro SATA 6Gbps SED SSD, 4XB7A37275	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ATP A600i Industrial SATA drives (non-SED)																						
M.2 120GB Industrial A600i SATA SSD, 4XB7A39422	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 480GB Industrial A600i SATA SSD, 4XB7A39423	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 800GB Industrial A600i SATA SSD, 4XB7A39424	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ATP A600i Industrial SATA SED drives (Opal encryption)																						
M.2 120GB Industrial A600i SATA SED SSD, 4XB7A37270	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 480GB Industrial A600i SATA SED SSD, 4XB7A37271	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 800GB Industrial A600i SATA SED SSD, 4XB7A37272	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Intel P4511 SATA drives (non-SED)																						
M.2 650GB P4511 NVMe High Endurance SSD, 4XB7A37276	Y*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 1TB P4511 NVMe SSD, 4XB7A37277	Y*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 2TB P4511 NVMe SSD, 4XB7A37278	Y*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Intel P4511 SATA SED drives (Opal encryption)																						
M.2 650GB P4511 NVMe SED High Endurance SSD, 4XB7A39426	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 1TB P4511 NVMe SED SSD, 4XB7A39427	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
M.2 2TB P4511 NVMe SED SSD, 4XB7A39428	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

* Planned for 4Q/2019

† Support of the M.2 Enablement Kit (7Y37A01092) in the SN550 is configure-to-order only. It cannot be installed in the SN550 as a field upgrade option.

‡ The use of the 480GB M.2 drive in the SR550, SR590 and SR650 may require that the M.2 480GB SSD Thermal Kit (4XH7A08791) also be installed. The thermal kit contains an air baffle that ensures proper cooling of the M.2 drive. See the [SR550](#), [SR590](#) and [SR650](#) product guides for specifics.

Operating system support

The adapters support the following operating systems:

- [ThinkSystem M.2 Enablement Kit, 7Y37A01092](#)
- [ThinkSystem M.2 with Mirroring Enablement Kit, 7Y37A01093](#)

Tip: These tables are automatically generated based on data from [Lenovo ServerProven](#).

Table 5. Operating system support for ThinkSystem M.2 Enablement Kit, 7Y37A01092 (Part 1 of 2)

Operating systems	SE350	SD530 (Gen 2)	SD650 (Gen 2)	SN550 (Gen 2)	SN850 (Gen 2)	SR530 (Gen 2)	SR550 (Gen 2)	SR570 (Gen 2)	SR590 (Gen 2)	SR630 (Gen 2)	SR650 (Gen 2)	SR670 (Gen 2)	SR850 (Gen 2)	SR860 (Gen 2)	SR950 (Gen 2)	ST550 (Gen 2)
For OS support info. please refer to LeSI Best Recipe.	N	N	Y ¹	N	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2012 R2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2016	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server 2019	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server version 1709	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server version 1803	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 6.10	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 6.9	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.5	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
Red Hat Enterprise Linux 7.6	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.7	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 11 SP4 with Xen	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP2 with Xen	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP3 with Xen	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP4	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4 with Xen	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1 with Xen	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 with Xen	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0 U3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U1	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U2	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U3	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y

¹ 1. This item is not a general stand-alone option for Lenovo ThinkSystem SD650 (Xeon SP Gen 2), M/T 7X58 (Xeon SP Gen 2). 2. For OS support matrix, pls refer to LeSI Best Recipe. 3. This item shall be installed/removed by Lenovo support rep only.

Table 6. Operating system support for ThinkSystem M.2 Enablement Kit, 7Y37A01092 (Part 2 of 2)

Operating systems	SD530 (Gen 1)	SD650 (Gen 1)	SN850 (Gen 1)	SR530 (Gen 1)	SR550 (Gen 1)	SR570 (Gen 1)	SR590 (Gen 1)	SR630 (Gen 1)	SR650 (Gen 1)	SR670 (Gen 1)	SR850 (Gen 1)	SR860 (Gen 1)	SR950 (Gen 1)	ST550 (Gen 1)
For OS support info. please refer to LeSI Best Recipe.	N	Y ¹	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2012 R2	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server 2016	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server 2019	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server version 1709	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server version 1803	Y	N	N	N	N	N	N	Y	Y	N	Y	Y	Y	N
Red Hat Enterprise Linux 6.10	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 6.9	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 7.3	Y	N	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
Red Hat Enterprise Linux 7.4	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 7.5	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.6	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 7.7	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP2	Y	N	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
SUSE Linux Enterprise Server 12 SP2 with Xen	Y	N	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
SUSE Linux Enterprise Server 12 SP3	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP3 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5	Y	N	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U1	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U1	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U2	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y

¹ 1. This item is not a general stand-alone option for Lenovo ThinkSystem SD650 (M/T 7X58). 2. For OS support matrix, pls refer to LeSI Best Recipe. 3. This Item shall be installed/removed by Lenovo support rep only.

Table 7. Operating system support for ThinkSystem M.2 with Mirroring Enablement Kit, 7Y37A01093 (Part 1 of 2)

Operating systems	SD530 (Gen 2)	SD650 (Gen 2)	SN550 (Gen 2)	SN850 (Gen 2)	SR530 (Gen 2)	SR550 (Gen 2)	SR570 (Gen 2)	SR590 (Gen 2)	SR630 (Gen 2)	SR650 (Gen 2)	SR670 (Gen 2)	SR850 (Gen 2)	SR860 (Gen 2)	SR950 (Gen 2)	ST550 (Gen 2)
For OS support info. please refer to LeSI Best Recipe.	N	Y ¹	N	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2012 R2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2016	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server 2019	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server version 1709	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server version 1803	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 6.10	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 6.9	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.5	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
Red Hat Enterprise Linux 7.6	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.7	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 11 SP4 with Xen	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP2 with Xen	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP3 with Xen	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP4	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0 U3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U1	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U2	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y

¹ 1. This item is not a general stand-alone option for Lenovo ThinkSystem SD650 (Xeon SP Gen 2), M/T 7X58 (Xeon SP Gen 2). 2. For OS support matrix, pls refer to LeSI Best Recipe. 3. This item shall be

installed/removed by Lenovo support rep only.

Table 8. Operating system support for ThinkSystem M.2 with Mirroring Enablement Kit, 7Y37A01093 (Part 2 of 2)

Operating systems	SD530 (Gen 1)	SD650 (Gen 1)	SN550 (Gen 1)	SN850 (Gen 1)	SR530 (Gen 1)	SR550 (Gen 1)	SR570 (Gen 1)	SR590 (Gen 1)	SR630 (Gen 1)	SR650 (Gen 1)	SR670 (Gen 1)	SR850 (Gen 1)	SR860 (Gen 1)	SR950 (Gen 1)	ST550 (Gen 1)
For OS support info. please refer to LeSI Best Recipe.	N	Y ¹	N	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2012 R2	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server 2016	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server 2019	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server version 1709	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Microsoft Windows Server version 1803	Y	N	Y	N	N	N	N	N	Y	Y	N	Y	Y	Y	N
Red Hat Enterprise Linux 6.10	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 6.9	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 7.3	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
Red Hat Enterprise Linux 7.4	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 7.5	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.6	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Red Hat Enterprise Linux 7.7	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP2	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
SUSE Linux Enterprise Server 12 SP2 with Xen	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
SUSE Linux Enterprise Server 12 SP3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP3 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 with Xen	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U1	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U1	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U2	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y

¹ 1. This item is not a general stand-alone option for Lenovo ThinkSystem SD650 (M/T 7X58). 2. For OS support matrix, pls refer to LeSI Best Recipe. 3. This Item shall be installed/removed by Lenovo support rep only.

Warranty

The M.2 drives and M.2 adapters carry a one-year, customer-replaceable unit (CRU) limited warranty. When the drives and adapters are installed in a supported server, these drives assume the server's base warranty and any warranty upgrades.

Solid State Memory cells have an intrinsic, finite number of program/erase cycles that each cell can incur. As a result, each solid state device has a maximum amount of program/erase cycles to which it can be subjected. The warranty for Lenovo solid state drives (SSDs) is limited to drives that have not reached the maximum guaranteed number of program/erase cycles, as documented in the Official Published Specifications for the SSD product. A drive that reaches this limit may fail to operate.

Physical specifications

M.2 drives have the following dimensions and weight:

- 2242 form factor drives: 22 mm x 42 mm, 5 g
- 2280 form factor drives: 22 mm x 80 mm, 10 g

M.2 adapters have the following dimensions and weight:

- Single M.2 Adapter: 117 mm x 30 mm, 17 g
- Dual M.2 Adapter: 117 mm x 30 mm, 18 g

Related publications and links

For more information, see these resources:

- Human Factors Engineer Tim Meserth shows the Lenovo M.2 offering:
<https://www.youtube.com/watch?v=ibtMAHihTPw&list=PLLQclfvNrqe7qYOrEMPsuHqs4JEHi0aG&index=5>
- Lenovo ThinkSystem 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:

- [Drives](#)

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