

Lenovo PM983 Entry NVMe PCIe SSDs Product Guide

The Lenovo PM983 Entry NVMe PCIe solid-state drives (SSDs) in capacities from 1.92 TB to 7.68 TB are general-purpose yet high-performance SSDs for System x and ThinkServer systems. They are engineered for greater performance and endurance in a cost-effective design, and to support a broader set of workloads.



Figure 1. ThinkSystem U.2 PM983 Entry NVMe PCIe 3.0 x4 Hot Swap SSD

Did you know?

The PM983 family of SSDs are follow-ons to the PM963 drives. The PM983 drives offer improved performance, both in terms of random read/write performance (IOPS) and sequential read/write bandwidth (MB/s). Sequential write latency has also been improved.

Lenovo Entry SSDs are suitable for read-intensive and general-purpose data center workloads, however their NVMe PCIe interface means the drives also offer high performance. Overall, these SSDs provide outstanding IOPS/watt and cost/IOPS for enterprise solutions.

Part number information

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

Table 1. Part numbers and feature codes for ThinkSystem

Part number	Feature code	Description
2.5-inch drives		
4XB7A10175	B34N	ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
4XB7A10176	B34P	ThinkSystem U.2 PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
4XB7A10177	B4D3	ThinkSystem U.2 PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD
3.5-inch drives		
4XB7A10178	B34Q	ThinkSystem 3.5" PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
4XB7A10179	B34R	ThinkSystem 3.5" PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
4XB7A10180	B4D4	ThinkSystem 3.5" PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD
7mm hot-swap drives		
4XB7A38216	BB63	ThinkSystem 7mm PM983 960GB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
4XB7A69798	BJN7	ThinkSystem 7mm PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
4XB7A69799	BJN8	ThinkSystem 7mm PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
4XB7A69800	BJN9	ThinkSystem 7mm PM983 7.68TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD
7mm trayless drives		
4XB7A38170	B95G	ThinkSystem PM983 2.5" 7mm 960GB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD
4XB7A76731	BJLU	ThinkSystem PM983 2.5" 7mm 1.92TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD
4XB7A76732	BJLV	ThinkSystem PM983 2.5" 7mm 3.84TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD
4XB7A76733	BJLW	ThinkSystem PM983 2.5" 7mm 7.68TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD

The part numbers include the following items:

- One solid-state drive
- Documentation flyer

Features

Non-Volatile Memory Express (NVMe) is PCIe 3.0 high performance SSD technology that provides high I/O throughput and low latency. NVMe interfaces remove SAS/SATA bottlenecks and unleash all of the capabilities of contemporary NAND flash memory. Each NVMe PCI SSD has direct PCIe 3.0 x4 connection, which provides at least 2x more bandwidth and 2x less latency than SATA/SAS-based SSD solutions. NVMe drives are also optimized for heavy multi-threaded workloads by using internal parallelism and many other improvements, such as enlarged I/O queues.

The PM983 Entry NVMe PCIe SSD have the following features:

- Available in 2.5-inch (U.2) and 3.5-inch form factors
- Low cost, read-intensive SSD from Samsung

- Direct PCIe 3.0 x4 connection for each NVMe drive, resulting in up to 4 GBps overall throughput.
- Advanced ECC Engine and End-to-End Data Protection
- Samsung 32 layer V-NAND stacks the vertical NAND layers in three dimensions, solving the cell-to-cell interference that causes data corruption in planar NAND.
- Protect data integrity from unexpected power loss with Samsung's advanced power-loss protection architecture
- Supports Self-Monitoring, Analysis and Reporting Technology (S.M.A.R.T).

Entry SSDs and Performance SSDs have similar read IOPS performance, but the key difference between them is their endurance -- how long they can reliably perform write operations. Entry SSDs have a better cost/IOPS ratio but lower endurance compared to Performance SSDs. SSD write endurance is typically measured by the number of program/erase (P/E) write cycles that the drive incurs over its lifetime, listed as the total bytes of written data (TBW) in the device specification.

The TBW value assigned to a solid-state device is the total bytes of written data (based on the number of P/E cycles) that a drive can be guaranteed to complete (% of remaining P/E cycles = % of remaining TBW). Reaching this limit does not cause the drive to immediately fail. It simply denotes the maximum number of writes that can be guaranteed. A solid-state device will not fail upon reaching the specified TBW. At some point based on manufacturing variance margin, after surpassing the TBW value, the drive will reach the end-of-life point, at which the drive will go into a read-only mode.

Because of such behavior by Entry solid-state drives, careful planning must be done to use them only in read-intensive or mixed up to 70% read/30% write environments to ensure that the TBW of the drive will not be exceeded before the required life expectancy.

For example, the PM983 Entry 3.84 TB drive has an endurance of 5466 TB of total bytes written (TBW). This means that for full operation over five years, write workload must be limited to no more than 2995 GB of writes per day, which is equivalent to 0.8 full drive writes per day (DWPD). For the device to last three years, the drive write workload must be limited to no more than 4992 GB of writes per day, which is equivalent to 1.3 full drive writes per day.

Technical specifications

The following tables present technical specifications for the PM983 Entry NVMe PCIe SSD.

Table 2. Technical specifications

Feature	960 GB drive	1.92 TB drive	3.84 TB drive	7.68 TB drive
Interface	PCIe 3.0 x4	PCIe 3.0 x4	PCIe 3.0 x4	PCIe 3.0 x4
Capacity	960 GB	1.92 TB	3.84 TB	7.68 TB
SED encryption	None	None	None	None
Endurance (total bytes written)	1366 TB	2733 TB	5466 TB	10932 TB
Endurance (drive writes per day for 5 years)	0.8 DWPD	0.8 DWPD	0.8 DWPD	0.8 DWPD
Data reliability (UBER)	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read
MTBF	2,000,000 hours	2,000,000 hours	2,000,000 hours	2,000,000 hours
IOPS reads (4 KB blocks)	400,000	540,000	540,000	540,000
IOPS writes (4 KB blocks)	40,000	50,000	50,000	55,000
Sequential read rate (128 KB blocks)	3200 MBps	3200 MBps	3200 MBps	3150 MBps
Sequential write rate (128 KB blocks)	1100 MBps	2000 MBps	2000 MBps	2100 MBps
Latency (random R/W)	85 μ s / 50 μ s	85 μ s / 50 μ s	85 μ s / 50 μ s	85 μ s / 15 μ s
Latency (sequential R/W)	15 μ s / 20 μ s	15 μ s / 20 μ s	15 μ s / 20 μ s	15 μ s / 20 μ s
Typical power (R/W)	8.7 W / 8.1 W	8.7 W / 10.6 W	8.7 W / 10.6 W	8.7 W / 10.6 W

Server support

The following tables list the ThinkSystem servers that are compatible.

Table 3. Server support (Part 1 of 3)

Part Number	Description	Edge		1S Intel V2			AMD V3			Dense		2S Intel V2				AMD V1			
		SE350 (7Z46 / 7D1X)	SE450 (7D8T)	ST50 V2 (7D8K / 7D8J)	ST250 V2 (7D8G / 7D8F)	SR250 V2 (7D7R / 7D7Q)	SR645 V3 (7D9D / 7D9C)	SR665 V3 (7D9B / 7D9A)	SR675 V3 (7D9Q / 7D9R)	SD665 V3 (7D9P)	SD665-N V3 (7DAZ)	ST650 V2 (7Z75 / 7Z74)	SR630 V2 (7Z70 / 7Z71)	SR650 V2 (7Z72 / 7Z73)	SR670 V2 (7Z22 / 7Z23)	SR635 (7Y98 / 7Y99)	SR655 (7Y00 / 7Z01)	SR665 Client OS	SR645 (7D2Y / 7D2X)
2.5-inch drives																			
4XB7A10175	ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
4XB7A10176	ThinkSystem U.2 PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
4XB7A10177	ThinkSystem U.2 PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	N
3.5-inch drives																			
4XB7A10178	ThinkSystem 3.5" PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	N	Y	Y	Y
4XB7A10179	ThinkSystem 3.5" PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	N	Y	Y	Y
4XB7A10180	ThinkSystem 3.5" PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	Y	Y	N
7mm hot-swap drives																			
4XB7A69798	ThinkSystem 7mm PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A69799	ThinkSystem 7mm PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A69800	ThinkSystem 7mm PM983 7.68TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
7mm trayless drives																			

Part Number	Description	Edge		1S Intel V2			AMD V3		Dense		2S Intel V2			AMD V1						
		SE350 (7Z46 / 7D1X)	SE450 (7D8T)	ST50 V2 (7D8K / 7D8J)	ST250 V2 (7D8G / 7D8F)	SR250 V2 (7D7R / 7D7Q)	SR645 V3 (7D9D / 7D9C)	SR665 V3 (7D9B / 7D9A)	SR675 V3 (7D9Q / 7D9R)	SD665 V3 (7D9P)	SD665-N V3 (7DAZ)	ST650 V2 (7Z75 / 7Z74)	SR630 V2 (7Z70 / 7Z71)	SR650 V2 (7Z72 / 7Z73)	SR670 V2 (7Z22 / 7Z23)	SR635 (7Y98 / 7Y99)	SR655 (7Y00 / 7Z01)	SR655 Client OS	SR645 (7D2Y / 7D2X)	SR665 (7D2W / 7D2V)
4XB7A76731	ThinkSystem PM983 2.5" 7mm 1.92TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A76732	ThinkSystem PM983 2.5" 7mm 3.84TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A76733	ThinkSystem PM983 2.5" 7mm 7.68TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Table 4. Server support (Part 2 of 3)

Part Number	Description	4S/8S V2			4S V1			Dense V2			1S Intel V1				
		SR850 V2 (7D31 / 7D32)	SR860 V2 (7Z59 / 7Z60)	SR950 (7X11 / 7X12)	SR850 (7X18 / 7X19)	SR850P (7D2F / 2D2G)	SR860 (7X69 / 7X70)	SD630 V2 (7D1K)	SD650 V2 (7D1M)	SD650-N V2 (7D1N)	SN550 V2 (7Z69)	ST50 (7Y48 / 7Y50)	ST250 (7Y45 / 7Y46)	SR150 (7Y54)	SR250 (7Y52 / 7Y51)
2.5-inch drives															
4XB7A10175	ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	N	N
4XB7A10176	ThinkSystem U.2 PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	N	N
4XB7A10177	ThinkSystem U.2 PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	N	N
3.5-inch drives															
4XB7A10178	ThinkSystem 3.5" PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A10179	ThinkSystem 3.5" PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A10180	ThinkSystem 3.5" PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
7mm hot-swap drives															
4XB7A69798	ThinkSystem 7mm PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
4XB7A69799	ThinkSystem 7mm PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
4XB7A69800	ThinkSystem 7mm PM983 7.68TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
7mm trayless drives															
4XB7A76731	ThinkSystem PM983 2.5" 7mm 1.92TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N
4XB7A76732	ThinkSystem PM983 2.5" 7mm 3.84TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N
4XB7A76733	ThinkSystem PM983 2.5" 7mm 7.68TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N

Table 5. Server support (Part 3 of 3)

Part Number	Description	2S Intel V1							Dense V1				
		ST550 (7X09 / 7X10)	SR530 (7X07 / 7X08)	SR550 (7X03 / 7X04)	SR570 (7Y02 / 7Y03)	SR590 (7X98 / 7X99)	SR630 (7X01 / 7X02)	SR650 (7X05 / 7X06)	SR670 (7Y36 / 7Y37)	SD530 (7X21)	SD650 (7X58)	SN550 (7X16)	SN850 (7X15)
2.5-inch drives													
4XB7A10175	ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y
4XB7A10176	ThinkSystem U.2 PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y
4XB7A10177	ThinkSystem U.2 PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y
3.5-inch drives													
4XB7A10178	ThinkSystem 3.5" PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	Y	Y	N	N	N	N	N
4XB7A10179	ThinkSystem 3.5" PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	Y	Y	N	N	N	N	N
4XB7A10180	ThinkSystem 3.5" PM983 7.68TB Entry NVMe PCIe3.0 x4 Hot Swap SSD	N	N	N	N	N	Y	Y	N	N	N	N	N
7mm hot-swap drives													
4XB7A69798	ThinkSystem 7mm PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A69799	ThinkSystem 7mm PM983 3.84TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A69800	ThinkSystem 7mm PM983 7.68TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD	N	N	N	N	N	N	N	N	N	N	N	N
7mm trayless drives													
4XB7A76731	ThinkSystem PM983 2.5" 7mm 1.92TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A76732	ThinkSystem PM983 2.5" 7mm 3.84TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	N	N	N	N	N
4XB7A76733	ThinkSystem PM983 2.5" 7mm 7.68TB Read Intensive Entry NVMe PCIe 3.0 x4 Trayless SSD	N	N	N	N	N	N	N	N	N	N	N	N

Storage controller support

NVMe PCIe SSDs require a NVMe drive backplane and some form of PCIe connection to processors. PCIe connections can take the form of either an adapter (PCIe Interposer or PCIe extender) or simply a cable that connects to an onboard NVMe connector.

Consult the relevant server product guide for details about required components for NVMe drive support.

Operating system support

The following tables list the supported operating systems.

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

Table 6. Operating system support for ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD, 4XB7A10175 (Part 1 of 3)

Operating systems	SN550 V2	SR630 V2	SR650 V2	SR670 V2	SR850 V2	SR860 V2	ST650 V2	SR635	SR645	SR655	SR665
Microsoft Windows 10	N	N	N	N	N	N	N	N	N	Y ²	N
Microsoft Windows 11	N	N	N	N	N	N	N	N	N	Y ²	N
Microsoft Windows Server 2012 R2	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2016	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2019	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server version 1803	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
Red Hat Enterprise Linux 6.9	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
Red Hat Enterprise Linux 7.4	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
Red Hat Enterprise Linux 7.6	N	N	N	N	N	N	N	Y ¹	Y ¹	Y ¹	Y ¹
Red Hat Enterprise Linux 7.7	N	N	N	N	N	N	N	Y ¹	Y ¹	Y ¹	Y ¹
Red Hat Enterprise Linux 7.8	N	N	N	N	N	N	N	Y ¹	Y ¹	Y ¹	Y ¹
Red Hat Enterprise Linux 7.9	Y	Y	Y	Y	Y	Y	Y	Y ¹	Y ¹	Y ¹	Y ¹
Red Hat Enterprise Linux 8.0	N	N	N	N	N	N	N	Y ¹	N	Y ¹	N
Red Hat Enterprise Linux 8.1	N	N	N	N	N	N	N	Y ¹	Y ¹	Y ¹	Y ¹
Red Hat Enterprise Linux 8.2	Y	Y	Y	Y	Y	Y	Y	Y ¹	Y ¹	Y ¹	Y ¹
Red Hat Enterprise Linux 8.3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4	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
SUSE Linux Enterprise Server 12 SP2 with Xen	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
SUSE Linux Enterprise Server 12 SP3 with Xen	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 12 SP4	N	N	N	N	N	N	N	Y ¹	N	Y ¹	N
SUSE Linux Enterprise Server 12 SP4 with Xen	N	N	N	N	N	N	N	Y ¹	N	Y ¹	N

Operating systems	SN550 V2	SR630 V2	SR650 V2	SR670 V2	SR850 V2	SR860 V2	ST650 V2	SR635	SR645	SR655	SR665
SUSE Linux Enterprise Server 12 SP5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP5 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	N	N	N	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 15 SP1	N	N	N	N	N	N	N	Y ¹	Y ¹	Y ¹	Y ¹
SUSE Linux Enterprise Server 15 SP1 with Xen	N	N	N	N	N	N	N	Y ¹	Y ¹	Y ¹	Y ¹
SUSE Linux Enterprise Server 15 SP2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 with Xen	N	N	N	N	N	N	N	N	N	N	N
Ubuntu 18.04.5 LTS	Y	Y	Y	Y	N	N	Y	N	N	N	N
Ubuntu 20.04 LTS	N	Y	Y	N	N	N	N	N	N	N	N
Ubuntu 22.04 LTS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0 U3	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
VMware vSphere Hypervisor (ESXi) 6.5 U1	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U2	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U3	N	N	N	N	N	N	N	Y ¹	N	Y ¹	N
VMware vSphere Hypervisor (ESXi) 6.7 U3	Y	Y	Y	Y	N	N	Y	N	N	N	N
VMware vSphere Hypervisor (ESXi) 7.0	N	N	N	N	N	N	N	Y ¹	Y ¹	Y ¹	Y ¹
VMware vSphere Hypervisor (ESXi) 7.0 U1	N	N	N	N	Y	Y	N	Y ¹	Y	Y ¹	Y
VMware vSphere Hypervisor (ESXi) 7.0 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

¹ The OS is not supported with EPYC 7003 processors.

² ISG will not sell/preload this OS, but compatibility and cert only.

Table 7. Operating system support for ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD, 4XB7A10175 (Part 2 of 3)

Operating systems	SD530 (Gen 2)	SN550 (Gen 2)	SN850 (Gen 2)	SR570 (Gen 2)	SR590 (Gen 2)	SR630 (Gen 2)	SR650 (Gen 2)	SR850 (Gen 2)	SR850P	SR860 (Gen 2)	SR950 (Gen 2)	ST550 (Gen 2)
Microsoft Windows 10	N	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows 11	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

	SD530 (Gen 2)	SN550 (Gen 2)	SN850 (Gen 2)	SR570 (Gen 2)	SR590 (Gen 2)	SR630 (Gen 2)	SR650 (Gen 2)	SR850 (Gen 2)	SR850P	SR860 (Gen 2)	SR950 (Gen 2)	ST550 (Gen 2)
Operating systems												
Microsoft Windows Server 2016	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2019	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server version 1803	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
Red Hat Enterprise Linux 6.9	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
Red Hat Enterprise Linux 7.4	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	N
Red Hat Enterprise Linux 7.6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.8	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.9	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4	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
SUSE Linux Enterprise Server 12 SP2 with Xen	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	Y	N	N	N
SUSE Linux Enterprise Server 12 SP3 with Xen	N	N	N	N	N	N	N	N	Y	N	N	N
SUSE Linux Enterprise Server 12 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP5 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

	SD530 (Gen 2)	SN550 (Gen 2)	SN850 (Gen 2)	SR570 (Gen 2)	SR590 (Gen 2)	SR630 (Gen 2)	SR650 (Gen 2)	SR850 (Gen 2)	SR850P	SR860 (Gen 2)	SR950 (Gen 2)	ST550 (Gen 2)
Operating systems												
SUSE Linux Enterprise Server 15 SP3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Ubuntu 18.04.5 LTS	N	N	N	N	N	N	N	N	N	N	N	N
Ubuntu 20.04 LTS	N	N	N	N	N	N	N	N	N	N	N	N
Ubuntu 22.04 LTS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0 U3	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
VMware vSphere Hypervisor (ESXi) 6.5 U1	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U3	N	N	N	N	N	N	N	Y	N	N	N	N
VMware vSphere Hypervisor (ESXi) 7.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 8. Operating system support for ThinkSystem U.2 PM983 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD, 4XB7A10175 (Part 3 of 3)

	SD530 (Gen 1)	SN550 (Gen 1)	SN850 (Gen 1)	SR570 (Gen 1)	SR590 (Gen 1)	SR630 (Gen 1)	SR650 (Gen 1)	SR850 (Gen 1)	SR860 (Gen 1)	SR950 (Gen 1)	ST550 (Gen 1)
Operating systems											
Microsoft Windows 10	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows 11	N	N	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2012 R2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2016	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2019	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server version 1803	Y	Y	N	N	N	Y	Y	Y	Y	Y	N
Red Hat Enterprise Linux 6.10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 6.9	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.3	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y
Red Hat Enterprise Linux 7.4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

	SD530 (Gen 1)	SN550 (Gen 1)	SN850 (Gen 1)	SR570 (Gen 1)	SR590 (Gen 1)	SR630 (Gen 1)	SR650 (Gen 1)	SR850 (Gen 1)	SR860 (Gen 1)	SR950 (Gen 1)	ST550 (Gen 1)
Operating systems											
Red Hat Enterprise Linux 7.5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.8	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.9	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP2	Y	N	Y	N	N	Y	Y	N	Y	Y	Y
SUSE Linux Enterprise Server 12 SP2 with Xen	Y	N	Y	N	N	Y	Y	N	Y	Y	Y
SUSE Linux Enterprise Server 12 SP3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP3 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP5 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Ubuntu 18.04.5 LTS	N	N	N	N	N	N	N	N	N	N	N
Ubuntu 20.04 LTS	N	N	N	N	N	N	N	N	N	N	N
Ubuntu 22.04 LTS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

	SD530 (Gen 1)	SN550 (Gen 1)	SN850 (Gen 1)	SR570 (Gen 1)	SR590 (Gen 1)	SR630 (Gen 1)	SR650 (Gen 1)	SR850 (Gen 1)	SR860 (Gen 1)	SR950 (Gen 1)	ST550 (Gen 1)
Operating systems											
VMware vSphere Hypervisor (ESXi) 6.0 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U3	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 7.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Warranty

The PM983 Entry NVMe PCIe SSDs carry a one-year, customer-replaceable unit (CRU) limited warranty. When the SSDs are installed in a supported server, these drives assume the system'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 according to its Specifications.

Physical specifications

The PM983 Entry NVMe PCIe SSDs have the following physical specifications:

Dimensions and weight (approximate, without the drive tray):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 70 g (2.5 oz)

Shipping dimensions and weight for the 2.5-inch drives (approximate):

- Height: 63 mm (2.5 in.)
- Width: 133 mm (5.2 in.)
- Depth: 174 mm (6.9 in.)
- Weight (with drive tray): 433 g (1.0 lb)

Operating environment

The PM983 Entry NVMe PCIe SSDs are supported in the following environment:

- Temperature: 0 to 70 °C (32 to 158 °F)
- Relative humidity: 5 to 95% (noncondensing)
- Maximum altitude: 3,050 m (10,000 ft)
- Shock, operating: 1,500 G (Max) at 0.5 ms
- Vibration: 2.17 G_{RMS} (7-800 Hz)

Agency approvals

The PM983 Entry NVMe PCIe SSDs conform to the following regulations:

- UL
- TUV
- FCC
- CE Mark
- C-Tick Mark
- BSMI (Taiwan)
- KCC (Korea EMI)

Related publications and links

For more information, see the following documents:

- Lenovo ThinkSystem storage options product web page
<https://lenovopress.com/lp0761-storage-options-for-thinksystem-servers>
- Samsung product page for Enterprise SSDs
<http://www.samsung.com/semiconductor/products/flash-storage/enterprise-ssd/>

Related product families

Product families related to this document are the following:

- [Drives](#)

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