120 GB, 240 GB, 480 GB, and 800 GB SATA MLC Enterprise Value SSDs
Product Guide (withdrawn product)

The Lenovo 120 GB, 240 GB, 480 GB, and 800 GB solid-state drives (SSDs) are next-generation Enterprise Value SSDs that are based on the Micron M500DC family of SSDs. The drives are engineered for greater performance and endurance in a cost-effective design, and to support a broader set of workloads. These SSDs are available as 2.5-inch form factor drives with both simple-swap (SS) and hot-swap (HS) options, as well as 3.5-inch hot-swap and 1.8-inch drives.

Figure 1. Lenovo SATA 2.5-inch MLC Enterprise Value SSDs

Did you know?

The next-generation Enterprise Value SSDs offer endurance of up to 2.4 DWPD for five years that is a substantial increase for Enterprise Value class SSDs and positions these drives to support larger data center workloads. Overall, these SSDs provide outstanding IOPS/watt and cost/IOPS for enterprise solutions and are an excellent choice for read-intensive and up to 70%/30% mixed read/write-intensive applications, such as web serving, hyperscale cloud, content delivery, caching, databases, and analytics.

Unlike client drives, these solid-state drives for System x are equipped with a robust suite of enterprise features, including Self-monitoring, analysis, and reporting technology (SMART) attributes and hot-plug support. They also use enterprise data path protection to verify data to and from NAND at every possible location and protect the integrity of the data. The NAND flash in these SSDs is screened and then tested specifically for enterprise customer use.

Providing that additional peace of mind, Enterprise Value MLC SSDs are covered under Lenovo warranty. These drives carry a 1-year limited warranty, or when installed in a supported Lenovo server, these drives assume your system's base warranty.

Part number information

Withdrawn: All the drives listed in this product guide are withdrawn from marketing.

Table 1. Ordering part numbers and feature codes

Part number	Feature	Description
1.8-inch SSDs		
00AJ335	A56V	120GB SATA 1.8" MLC Enterprise Value SSD
00AJ340	A56W	240GB SATA 1.8" MLC Enterprise Value SSD
00AJ345	A56X	480GB SATA 1.8" MLC Enterprise Value SSD
00AJ350	A56Y	800GB SATA 1.8" MLC Enterprise Value SSD
2.5-inch SSDs - Hot swap		
00AJ395	A577	120GB SATA 2.5" MLC G3HS Enterprise Value SSD
00AJ400	A578	240GB SATA 2.5" MLC G3HS Enterprise Value SSD
00AJ405	A579	480GB SATA 2.5" MLC G3HS Enterprise Value SSD
00AJ410	A57A	800GB SATA 2.5" MLC G3HS Enterprise Value SSD
00AJ355	A56Z	120GB SATA 2.5" MLC HS Enterprise Value SSD
00AJ360	A570	240GB SATA 2.5" MLC HS Enterprise Value SSD
00AJ365	A571	480GB SATA 2.5" MLC HS Enterprise Value SSD
00AJ370	A572	800GB SATA 2.5" MLC HS Enterprise Value SSD
2.5-inch SSDs - Simple swap		
00AJ375	A573	120GB SATA 2.5" MLC SS Enterprise Value SSD
00AJ380	A574	240GB SATA 2.5" MLC SS Enterprise Value SSD
00AJ385	A575	480GB SATA 2.5" MLC SS Enterprise Value SSD
00AJ390	A576	800GB SATA 2.5" MLC SS Enterprise Value SSD
2.5-inch SSDs - for Flex System x222		
00AJ415	A57B	120GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222
00AJ420	A57C	240GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222
00AJ425	A57D	480GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222
00AJ430	A57E	800GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222
2.5-inch SSDs - for NeXtScale System		
00FN020	A57K	120GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System
00FN025	A57L	240GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System
00FN030	A57M	480GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System
00FN035	A57N	800GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System
3.5-inch SSDs		
00AJ435	A57F	120GB SATA 3.5" MLC HS Enterprise Value SSD
00AJ440	A57G	240GB SATA 3.5" MLC HS Enterprise Value SSD
00AJ445	A57H	480GB SATA 3.5" MLC HS Enterprise Value SSD
00AJ450	A57J	800GB SATA 3.5" MLC HS Enterprise Value SSD

The part numbers include the following items:

- One SSD without a drive tray (1.8-inch SSDs and 2.5-inch SSDs for NeXtScale System) or one SSD mounted on a 2.5-inch hot-swap drive tray (2.5-inch HS SSDs) or 2.5-inch simple-swap drive tray (2.5-inch SS SSDs) or 3.5-inch hot swap drive tray (3.5-inch SSDs)
- Support Flyer for SSDs
- Warranty Flyer
- Important Notices Flyer

Features

The Lenovo Serial Advanced Technology Attachment (SATA) MLC Enterprise Value SSDs have the following features:

- 1.8-inch, 2.5-inch, and 3.5-inch industry standard form factors
- Support for a conventional 2.5-inch or 3.5-inch drive bay (2.5-inch or 3.5-inch SSDs, respectively) or eXFlash SSD drive bay or SSD drive bay on selected iDataPlex®, BladeCenter®, Flex System™, and NeXtScale System servers (1.8-inch drives)
- 6 Gbps SATA interface
- Use of industry-leading Micron 20 nm MLC NAND technology
- Cost-effective MLC NAND technology with high read and write performance:
  - Up to 65,000 read IOPS
  - Up to 35,000 write IOPS
  - Up to 425 MBps sequential read rate
  - Up to 375 MBps sequential write rate
- Enterprise Data Path Protection to ensure NAND integrity
- Static and dynamic wear leveling
- Endurance: up to 1.9 PB of total bytes written (TBW) for an 800 GB drive
- Support for MegaRAID CacheCade feature of a supported ServeRAID controller
- Energy-saving 6 watt typical power consumption per drive
- Absence of moving parts reduces potential failure points in the server
- Native command queuing support
- Self-monitoring, analysis, and reporting technology (SMART) command set

Enterprise Value SSDs and Enterprise SSDs have similar read and write IOPS performance, but the key difference between them is their endurance (or lifetime) (that is, how long they can perform write operations because SSDs have a finite number of program/erase (P/E) cycles). Enterprise Value SSDs have a better cost/IOPS ratio but lower endurance compared to Enterprise SSDs. SSD write endurance is typically measured by the number of program/erase (P/E) 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 Enterprise Value 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.

The Enterprise Value drives described here are capable of up to 1.9 PB (480 and 800 GB SSDs) of lifetime writes. For the 480 GB SSD to last five years inside of the 1.9 PB of TBW, the drive write workload must be limited to no more than 1,040 GB of writes per day, which is equivalent to about 2.2 full drive writes per day. For the device to last three years, the drive write workload must be limited to no more than 1,735 GB of writes per day (or 3.6 full drive writes per day).

Technical specifications

The following tables present technical specifications for the Enterprise Value solid-state drives.

Table 2. Enterprise Value SSD technical specifications - 2.5-inch SSDs

Feature	120 GB		240 GB		480 GB		800 GB	
Part number	00AJ395 00AJ355	00AJ375 00AJ415 00FN020	00AJ400 00AJ360	00AJ380 00AJ420 00FN025	00AJ405 00AJ365	00AJ385 00AJ425 00FN030	00AJ410 00AJ370	00AJ390 00AJ430 00FN035
Hot-swap drive	Yes	No	Yes	No	Yes	No	Yes	No
Form factor	2.5-in.	2.5-in.	2.5-in.	2.5-in.	2.5-in.	2.5-in.	2.5-in.	2.5-in.
Interface	6 Gbps SATA		6 Gbps SATA		6 Gbps SATA		6 Gbps SATA	
Capacity	120 GB		240 GB		480 GB		800 GB	
Endurance	0.5 PB		1.0 PB		1.9 PB		1.9 PB	
Data reliability	< 1 in 10^{15} bits read		< 1 in 10^{15} bits read		< 1 in 10^{15} bits read		< 1 in 10^{15} bits read	
MTBF, hours	2,000,000		2,000,000		2,000,000		2,000,000	
IOPS read*	63,000		63,000		63,000		65,000	
IOPS write*	23,000		33,000		35,000		24,000	
Sequential read rate†	425 MBps		425 MBps		425 MBps		425 MBps	
Sequential write rate†	200 MBps		330 MBps		375 MBps		375 MBps	
Read latency	0.5 ms		0.5 ms		0.5 ms		0.5 ms	
Write latency	1.5 ms		1.5 ms		1.5 ms		1.5 ms	
Shock, operating	1500 G/0.5 ms		1500 G/0.5 ms		1500 G/0.5 ms		1500 G/0.5 ms	
Vibration, operating	10–500 Hz at 3.1 G		10–500 Hz at 3.1 G		10–500 Hz at 3.1 G		10–500 Hz at 3.1 G	
Typical power	4 W		5 W		6 W		6.3 W	

* 4 KB block transfers
† 128 KB block transfers

Table 3. Enterprise Value SSD technical specifications - 1.8-inch and 3.5-inch SSDs

Feature	120 GB		240 GB		480 GB		800 GB	
Part number	00AJ335	00AJ435	00AJ340	00AJ440	00AJ345	00AJ445	00AJ350	00AJ450
Hot-swap drive	Yes§	Yes	Yes§	Yes	Yes§	Yes	Yes§	Yes
Form factor	1.8-in.	3.5-in.	1.8-in.	3.5-in.	1.8-in.	3.5-in.	1.8-in.	3.5-in.
Interface	6 Gbps SATA		6 Gbps SATA		6 Gbps SATA		6 Gbps SATA	
Capacity	120 GB		240 GB		480 GB		800 GB	
Endurance	0.5 PB		1.0 PB		1.9 PB		1.9 PB	
Data reliability	< 1 in 10^{15} bits read		< 1 in 10^{15} bits read		< 1 in 10^{15} bits read		< 1 in 10^{15} bits read	
MTBF, hours	2,000,000		2,000,000		2,000,000		2,000,000	
IOPS read*	63,000		63,000		63,000		65,000	
IOPS write*	23,000		33,000		35,000		24,000	
Sequential read rate†	425 MBps		425 MBps		425 MBps		425 MBps	
Sequential write rate†	200 MBps		330 MBps		375 MBps		375 MBps	
Read latency	0.5 ms		0.5 ms		0.5 ms		0.5 ms	
Write latency	1.5 ms		1.5 ms		1.5 ms		1.5 ms	
Shock, operating	1500 G/0.5 ms		1500 G/0.5 ms		1500 G/0.5 ms		1500 G/0.5 ms	
Vibration, operating	10–500 Hz at 3.1 G		10–500 Hz at 3.1 G		10–500 Hz at 3.1 G		10–500 Hz at 3.1 G	
Typical power	4 W		5 W		6 W		6.3 W	

§ This SSD can be a hot-swap or non-hot-swap drive depending on the server in which it is installed.
* 4 KB block transfers
† 128 KB block transfers

Supported servers - System x

The following tables list the compatibility information for the SATA MLC Enterprise Value SSDs and System x, iDataPlex, NeXtScale, Flex System and BladeCenter servers.

Support for System x and dense servers with Xeon E5/E7 v4 and E3 v5 processors

Table 4. Support for System x and dense servers with Xeon E5/E7 v4 and E3 v5 processors

Part number	Description	x3250 M6 (3943)	x3250 M6 (3633)	x3550 M5 (8869)	x3650 M5 (8871)	x3850 X6/x3950 X6 (6241, E7 v4)	nx360 M5 (5465, E5-2600 v4)	sd350 (5493)
00AJ335	120GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	N
00AJ340	240GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	N
00AJ345	480GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	N
00AJ350	800GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	N
00AJ395	120GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	N
00AJ400	240GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	N
00AJ405	480GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	N
00AJ410	800GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	N
00AJ355	120GB SATA 2.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ360	240GB SATA 2.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ365	480GB SATA 2.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ370	800GB SATA 2.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ375	120GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ380	240GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ385	480GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ390	800GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N
00AJ415	120GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N	N	N
00AJ420	240GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N	N	N
00AJ425	480GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N	N	N
00AJ430	800GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N	N	N
00FN020	120GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N	Y	N
00FN025	240GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N	Y	N
00FN030	480GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N	Y	N
00FN035	800GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N	Y	N
00AJ435	120GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	N	N	N
00AJ440	240GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	N	N	N
00AJ445	480GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	N	N	N
00AJ450	800GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	N	N	N

System x servers with Intel Xeon v3 servers

Table 5. Support for servers with Intel Xeon v3 processors

Part number	Description	x3100 M5 (5457)	x3250 M5 (5458)	x3500 M5 (5464)	x3550 M5 (5463)	x3650 M5 (5462)	x3850 X6/x3950 X6 (6241, E7 v3)	nx360 M5 (5465)
00AJ335	120GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N
00AJ340	240GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N
00AJ345	480GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N
00AJ350	800GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N	Y	N
00AJ395	120GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	Y
00AJ400	240GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	Y
00AJ405	480GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	Y
00AJ410	800GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	Y	Y	Y	Y	Y
00AJ355	120GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	N	N	N	N	N
00AJ360	240GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	N	N	N	N	N
00AJ365	480GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	N	N	N	N	N
00AJ370	800GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	N	N	N	N	N
00AJ375	120GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	N	N	N	N	N
00AJ380	240GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	N	N	N	N	N
00AJ385	480GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	N	N	N	N	N
00AJ390	800GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	N	N	N	N	N
00AJ415	120GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N
00AJ420	240GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N
00AJ425	480GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N
00AJ430	800GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N
00FN020	120GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	Y
00FN025	240GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	Y
00FN030	480GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	Y
00FN035	800GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	Y
00AJ435	120GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	Y	N	N
00AJ440	240GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	Y	N	N
00AJ445	480GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	Y	N	N
00AJ450	800GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	Y	Y	Y	N	N

System x servers with Intel Xeon v2 servers

Table 6. Support for servers with Intel Xeon v2 processors

Part number	Description	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3650 M4 HD (5460)	x3750 M4 (8752)	x3750 M4 (8753)	x3850 X6/x3950 X6 (3837)	x3850 X6/x3950 X6 (6241, E7 v2)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)
00AJ335	120GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	Y	Y	N	Y	Y	N	N
00AJ340	240GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	Y	Y	N	Y	Y	N	N
00AJ345	480GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	Y	Y	N	Y	Y	N	N
00AJ350	800GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	Y	N	Y	Y	N	Y	Y	N	N
00AJ395	120GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N
00AJ400	240GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	Y	Y	N	N
00AJ405	480GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	Y	Y	N	N
00AJ410	800GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	Y	Y	N	N
00AJ355	120GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	N	Y	N	Y	Y	N	N	N	N	N
00AJ360	240GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	N	Y	N	Y	Y	N	N	N	N	N
00AJ365	480GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	N	Y	N	Y	Y	N	N	N	N	N
00AJ370	800GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	N	Y	N	Y	Y	N	N	N	N	N
00AJ375	120GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	Y	N	Y	N	N	N	N	N	N	Y	N
00AJ380	240GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	Y	N	Y	N	N	N	N	N	N	Y	N
00AJ385	480GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	Y	N	Y	N	N	N	N	N	N	Y	N
00AJ390	800GB SATA 2.5" MLC SS Enterprise Value SSD	N	Y	Y	N	Y	N	N	N	N	N	N	Y	N
00AJ415	120GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N	N	N	N	N	N	N
00AJ420	240GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N	N	N	N	N	N	N
00AJ425	480GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N	N	N	N	N	N	N
00AJ430	800GB SATA 2.5" MLC Enterprise Value SSD x222	N	N	N	N	N	N	N	N	N	N	N	N	N
00FN020	120GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N	N	Y
00FN025	240GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N	N	Y
00FN030	480GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N	N	Y
00FN035	800GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N	N	Y
00AJ435	120GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	Y	N	Y	N	N	N	N	N	N	N
00AJ440	240GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	Y	N	Y	N	N	N	N	N	N	N
00AJ445	480GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	Y	N	Y	N	N	N	N	N	N	N
00AJ450	800GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	Y	N	N	N	N	N	N	N	N	N

Supported servers - Flex System

The following table lists the compatibility information for Flex System servers.

Table 7. Support for Flex System servers

Part number	Description	x220 (7906)	x222 (7916)	x240 (8737, E5-2600)	x240 (8737, E5-2600 v2)	x240 (7162)	x240 M5 (9532)	x440 (7917)	x440 (7167)	x880/x480/x280 X6 (7903)	x280/x480/x880 X6 (7196)	Storage Expansion Node
00AJ335	120GB SATA 1.8" MLC Enterprise Value SSD	N	Y	Y	Y	Y	Y	N	Y	N	N	N
00AJ340	240GB SATA 1.8" MLC Enterprise Value SSD	N	Y	Y	Y	Y	Y	N	Y	N	N	N
00AJ345	480GB SATA 1.8" MLC Enterprise Value SSD	N	Y	Y	Y	Y	Y	N	Y	N	N	N
00AJ350	800GB SATA 1.8" MLC Enterprise Value SSD	N	Y	Y	Y	Y	Y	N	Y	N	N	N
00AJ395	120GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	Y	N	N	Y	Y	N
00AJ400	240GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	Y	N	N	Y	Y	N
00AJ405	480GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	Y	N	N	Y	Y	N
00AJ410	800GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N	Y	N	N	Y	Y	N
00AJ355	120GB SATA 2.5" MLC HS Enterprise Value SSD	Y	N	Y	Y	Y	N	Y	Y	N	N	Y
00AJ360	240GB SATA 2.5" MLC HS Enterprise Value SSD	Y	N	Y	Y	Y	N	Y	Y	N	N	Y
00AJ365	480GB SATA 2.5" MLC HS Enterprise Value SSD	Y	N	Y	Y	Y	N	Y	Y	N	N	Y
00AJ370	800GB SATA 2.5" MLC HS Enterprise Value SSD	Y	N	Y	Y	Y	N	Y	Y	N	N	Y
00AJ375	120GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N
00AJ380	240GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N
00AJ385	480GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N
00AJ390	800GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N
00AJ415	120GB SATA 2.5" MLC Enterprise Value SSD x222	N	Y	N	N	N	N	N	N	N	N	N
00AJ420	240GB SATA 2.5" MLC Enterprise Value SSD x222	N	Y	N	N	N	N	N	N	N	N	N
00AJ425	480GB SATA 2.5" MLC Enterprise Value SSD x222	N	Y	N	N	N	N	N	N	N	N	N
00AJ430	800GB SATA 2.5" MLC Enterprise Value SSD x222	N	Y	N	N	N	N	N	N	N	N	N
00FN020	120GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N
00FN025	240GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N
00FN030	480GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N
00FN035	800GB SATA 2.5" MLC Enterprise Value SSD NeXtScale	N	N	N	N	N	N	N	N	N	N	N
00AJ435	120GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N
00AJ440	240GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N
00AJ445	480GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N
00AJ450	800GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N	N	N	N	N	N	N

Supported servers - BladeCenter

The following table lists the compatibility information for BladeCenter servers.

Table 8. Support for BladeCenter servers

Part number	Description	HS22 (7870)	HS23 (7875, E5-2600)	HS23 (7875, E5-2600 v2)	HS23E (8038)	HX5 (7873)
00AJ335	120GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N
00AJ340	240GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N
00AJ345	480GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N
00AJ350	800GB SATA 1.8" MLC Enterprise Value SSD	N	N	N	N	N
00AJ395	120GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N
00AJ400	240GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N
00AJ405	480GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N
00AJ410	800GB SATA 2.5" MLC G3HS Enterprise Value SSD	N	N	N	N	N
00AJ355	120GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N
00AJ360	240GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N
00AJ365	480GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N
00AJ370	800GB SATA 2.5" MLC HS Enterprise Value SSD	Y	Y	Y	Y	N
00AJ375	120GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N
00AJ380	240GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N
00AJ385	480GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N
00AJ390	800GB SATA 2.5" MLC SS Enterprise Value SSD	N	N	N	N	N
00AJ415	120GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N
00AJ420	240GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N
00AJ425	480GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N
00AJ430	800GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222	N	N	N	N	N
00FN020	120GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N
00FN025	240GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N
00FN030	480GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N
00FN035	800GB SATA 2.5" MLC Enterprise Value SSD for NeXtScale System	N	N	N	N	N
00AJ435	120GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N
00AJ440	240GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N
00AJ445	480GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N
00AJ450	800GB SATA 3.5" MLC HS Enterprise Value SSD	N	N	N	N	N

See the ServerProven® website for the latest compatibility information for System x, BladeCenter, iDataPlex, and Flex System servers: http://www.lenovo.com/us/en/serverproven/

Supported storage controllers

The SSDs require a supported disk controller. The following table list the controllers that support these solid-state drives installed in a supported server.

Table 9. Controller support - System x

Part number	Description	Xeon v2								Xeon v3							Xeon v4			
		x3300 M4 (7382)	x3500 M4 (7383, E5-2600 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3750 M4 (8753)	x3850 X6/x3950 X6 (6241, E7 v2)	x3100 M5 (5457)	x3250 M5 (5458)	x3500 M5 (5464)	x3550 M5 (5463)	x3650 M5 (5462)	x3850 X6/x3950 X6 (6241, E7 v3)	nx360 M5 (5465, E5-2600 v3)	x3550 M5 (8869)	x3650 M5 (8871)	x3850 X6/x3950 X6 (6241, E7 v3)	nx360 M5 (5465, E5-2600 v4)
46M0907	6Gb SAS HBA	Y	Y	Y	Y	Y	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
46C8988	N2115 SAS/SATA HBA	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N
47C8675	N2215 SAS/SATA HBA	N	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
81Y4492	ServeRAID H1110 Controller	Y	N	Y	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N
81Y4448	ServeRAID M1115 Controller	Y	Y	Y	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N
00JY194	ServeRAID M1210 Controller	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
46C9114	ServeRAID M1215 Controller	N	Y	Y	N	N	Y	Y	N	N	N	Y	Y	Y	N	Y	Y	Y	N	Y
81Y4481	ServeRAID M5110 Controller	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N
46C9110	ServeRAID M5210 Controller	N	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 10. Controller support - BladeCenter

Part number	Description	HS22 (7870)	HS23 (7875, E5-2600)	HS23 (7875, E5-2600 v2)	HS23E (8038)	HX5 (7873)
90Y4750	ServeRAID H1135 Controller	N	N	N	Y	N
Onboard	Integrated LSI SAS2004	N	Y	Y	N	N
Onboard	Integrated LSI SAS1064e	Y	N	N	N	N
46M6908	SSD Expansion Card for BladeCenter HX5	N	N	N	N	Y

Table 11. Controller support - Flex System

Part number	Description	x220 (7906)	x222 (7916)	x240 (8737, E5-2600)	x240 (8737, E5-2600 v2)	x240 (7162)	x240 M5 (9532)	x440 (7917)	x440 (7167)	x280/x480/x880 X6 (7903)	x280/x480/x880 X6 (7196)
00JX142	ServeRAID M5215 with 2GB Flash Enablement	N	N	N	N	N	Y	N	N	N	N
Onboard	ServeRAID M1210e	N	N	N	N	N	N	N	N	Y	Y
44T1316	ServeRAID M1200 Flex System Flash Kit for X6	N	N	N	N	N	N	N	N	N	Y
44T1178	ServeRAID M5100 Flex System Flash Kit for X6*	N	N	N	N	N	N	N	N	N	Y
90Y4390	ServeRAID M5115	Y	N	Y	Y	Y	N	Y	Y	N	N
90Y4750	ServeRAID H1135	Y	N	N	N	N	N	N	N	N	N
Onboard	Integrated SATA Controller (Intel C600 chipset)	N	Y	N	N	N	N	N	N	N	N

* Includes ServeRAID M5115 adapter.

SSD Caching support: The 120 GB, 240 GB, 480 GB, and 800 GB SATA MLC Enterprise Value SSDs described in this product guide support MegaRAID CacheCade feature of the supported ServeRAID controllers.

See the ServerProven website for the latest information about the adapters supported by each System x server type: http://www.lenovo.com/us/en/serverproven/

Supported operating systems

Solid-state drives operate transparently to users, storage systems, applications, databases, and operating systems. The controllers that support SSDs are supported by the following operating systems:

- Microsoft Windows Essential Business Server 2008 Premium Edition
- Microsoft Windows Essential Business Server 2008 Standard Edition
- Microsoft Windows Small Business Server 2008 Premium Edition
- Microsoft Windows Small Business Server 2008 Standard Edition
- Microsoft Windows HPC Server 2008
- Microsoft Windows Server 2008 Foundation
- Microsoft Windows Server 2008 HPC Edition
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows Server 2008, Datacenter x86 Edition
- Microsoft Windows Server 2008, Enterprise x64 Edition
- Microsoft Windows Server 2008, Enterprise x86 Edition
- Microsoft Windows Server 2008, Standard x64 Edition
- Microsoft Windows Server 2008, Standard x86 Edition
- Microsoft Windows Server 2008, Web x64 Edition
- Microsoft Windows Server 2008, Web x86 Edition
- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 R2
- Red Hat Enterprise Linux 4 AS for AMD64/EM64T
- Red Hat Enterprise Linux 4 AS for x86
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server Edition with Xen
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- SUSE Linux Enterprise Server 10 for AMD64/EM64T
- SUSE Linux Enterprise Server 10 for x86
- SUSE Linux Enterprise Server 10 with Xen for AMD64/EM64T
- SUSE Linux Enterprise Server 10 with Xen for x86
- SUSE Linux Enterprise Server 11 for AMD64/EM64T
- SUSE Linux Enterprise Server 11 for x86
- SUSE Linux Enterprise Server 11 with Xen for AMD64/EM64T
- SUSE Linux Enterprise Server 12
- SUSE Linux Enterprise Server 12 with Xen
- VMware ESX 4.0
- VMware ESX 4.1
- VMware ESXi 4.0
- VMware ESXi 4.1
- VMware vSphere 5.0 (ESXi)
- VMware vSphere 5.1 (ESXi)
- VMware vSphere 5.5 (ESXi)
- VMware vSphere 6.0 (ESXi)

See the ServerProven website for the latest information about the specific versions and service packs supported:
http://www.lenovo.com/us/en/serverproven/

Click **System x servers**, then **Disk controllers** to see the support matrix. Click the check mark that is associated with the System x server in question to see the details of the operating system support.

Warranty

The SATA MLC Enterprise Value SSDs carry a 1-year, customer-replaceable unit (CRU) limited warranty. When installed in a supported Lenovo server, these drives assume your system's base warranty and any Lenovo Services upgrade.

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 1.8-inch MLC Enterprise Value SSDs have the following physical specifications.

Dimensions and weight (approximate):

- Height: 5 mm (0.2 in.)
- Width: 54 mm (2.1 in.)
- Depth: 79 mm (3.1 in.)
- Weight: 44 g (0.1 lb)

Shipping dimensions and weight (approximate):

- Height: 32 mm (1.3 in.)
- Width: 150 mm (5.9 in.)
- Depth: 226 mm (8.9 in.)
- Weight: 394 g (0.9 lb)

The 2.5-inch MLC HS and SS Enterprise Value SSDs have the following physical specifications.

Dimensions and weight (approximate):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 74 g (0.2 lb)

Shipping dimensions and weight (approximate):

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

The 2.5-inch MLC Enterprise Value SSDs for Flex System x222 have the following physical specifications.

Dimensions and weight (approximate):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 74 g (0.2 lb)

Shipping dimensions and weight (approximate):

- Height: 140 mm (5.5 in.)
- Width: 204 mm (8.0 in.)
- Depth: 254 mm (5.2 in.)
- Weight: 433 g (1.0 lb)

The 2.5-inch MLC Enterprise Value SSDs for NeXtScale System have the following physical specifications.

Dimensions and weight (approximate):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 74 g (0.2 lb)

Shipping dimensions and weight (approximate):

- Height: 63 mm (2.5 in.)
- Width: 133 mm (5.2 in.)
- Depth: 174 mm (6.9 in.)
- Weight: 314 g (0.7 lb)

The 3.5-inch MLC HS Enterprise Value SSDs have the following physical specifications.

Dimensions and weight (approximate, without a 3.5-inch tray):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 74 g (0.2 lb)

Shipping dimensions and weight (approximate):

- Height: 95 mm (3.7 in.)
- Width: 194 mm (7.6 in.)
- Depth: 257 mm (10.0 in.)
- Weight: 469 g (1.1 lb)

Operating environment

The MLC Enterprise Value SSDs are supported in the following environment:

- Temperature: 0 - 70 °C (32 - 158 °F)
- Relative humidity: 8 - 85% (noncondensing)
- Maximum altitude: 3,050 m (10,000 ft)

Agency approvals

The MLC Enterprise Value SSDs conform to the following regulations:

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

Related publications

For more information, see the following documents:

- Lenovo product page for SSDs:
  http://shop.lenovo.com/us/en/systems/servers/options/systemx/storage/solid-state/
- Lenovo Press product guides for RAID adapters
  https://lenovopress.com/servers/options/raid
- Lenovo Press product guides for SAS HBAs
  https://lenovopress.com/servers/options/hba
- US Announcement Letter for the SATA MLC Enterprise Value SSDs
  http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS114-069
- Lenovo Press ServeRAID Adapter Quick Reference
  http://lenovopress.com/tips0054

Related product families

Product families related to this document are the following:

- Drives

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