



# Storage Options for ThinkSystem Servers

## Reference Information

## RAID Controllers & Storage Adapters

Lenovo Storage Adapters provide a new level of reliability & performance for data centers via exceptional Data Center storage redundancy.

- [RAID Controllers](#)
- [SAS Host Bus Adapters](#)
- [NVMe Switch Adapters](#)

### RAID Controllers

Redundancy and Protection for Critical Enterprise Data. Lenovo RAID controllers provide reliable data protection and performance with a wide range of RAID solutions covering SMB to Large Enterprise customers.

Additional resources:

- [Lenovo ThinkSystem RAID Adapter and HBA Comparison Reference](#)
- [Lenovo RAID Management Tools and Resources](#)
- [Lenovo RAID Introduction](#)

#### RAID Controllers for Internal Storage

##### ThinkSystem RAID 530-8i PCIe 12Gb Adapter

Entry-level 12Gb SAS/SATA internal RAID adapter that offers a cost-effective RAID solution for small to medium business customers. This cacheless adapter supports up to eight drives and RAID levels 0, 1, 10, 5, and 50.

Learn more:

- [Product Guide](#)

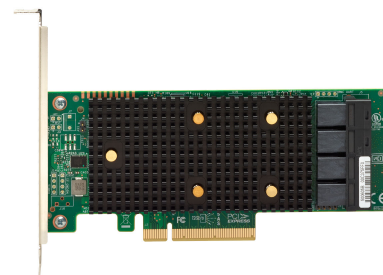


##### ThinkSystem RAID 530-16i PCIe 12Gb Adapter

Entry-level 12Gb SAS/SATA internal RAID adapter that offers a cost-effective RAID solution for small to medium business customers. This cacheless adapter supports up to 16 drives and RAID levels 0, 1, and 10.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 5350-8i PCIe 12Gb Adapter

Entry-level 12 Gb SAS/SATA internal RAID adapter manufactured by Lenovo that offers a cost-effective RAID solution for small to medium business customers. This cacheless adapter supports RAID levels 0/1/10/5, and include support for Lenovo management tools.

Learn more:

- [Product Guide](#)

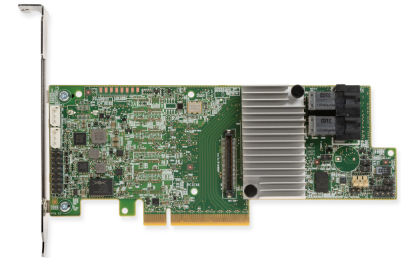


### ThinkSystem RAID 730-8i 1GB Cache PCIe 12Gb Adapter

12 Gb SAS/SATA internal RAID adapter that offers a cost-effective RAID solution for small to medium business customers. Comes standard with 1GB cache (no flash backup), supports RAID levels 0/1/10/5/50, and includes an extensive list of RAS and management features. Available world-wide except USA and Canada.

Learn more:

- [Product Guide](#)

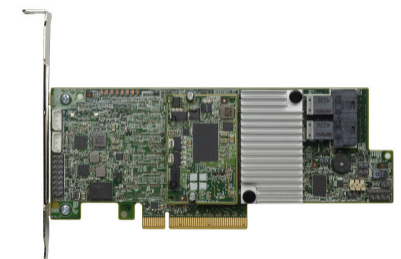


### ThinkSystem RAID 730-8i 2GB Flash PCIe 12Gb Adapter

12 Gb SAS/SATA internal RAID adapter that offers a cost-effective RAID solution for small to medium business customers. Comes standard with 2GB cache and a flash-based backup unit, supports RAID levels 0/1/10/5/50/6/60, and includes an extensive list of RAS and management features. Available in Asia Pacific countries and China.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 930-8i 2GB Flash PCIe 12Gb Adapter

Advanced 12Gbps SAS RAID adapter with 2GB of onboard cache and a flash-based backup unit. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to eight drives.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 930-16i PCIe 12Gb Adapter

Advanced 12Gbps SAS RAID adapter with either 4GB or 8GB of onboard cache and a flash-based backup unit. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to 16 drives.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 930-24i 4GB Flash PCIe 12Gb Adapter

Advanced 12Gbps SAS RAID adapter with 4GB of onboard cache and a flash-based backup unit. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to 24 drives.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter

12Gbps SAS RAID adapter with 2GB of onboard cache and a flash-based backup unit. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to 8 drives. Manufactured by Lenovo.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 9350-16i 4GB Flash PCIe 12Gb Adapter

12Gbps SAS RAID adapter with 4GB of onboard cache and a flash-based backup unit. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to 16 drives. Manufactured by Lenovo.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 940-8i 4GB and 8GB Flash PCIe Gen4 12Gb Adapters

Advanced 12Gbps SAS RAID adapters with a PCIe 4.0 host interface and either 4GB or 8GB of onboard cache and a flash-based backup unit. The adapters offer RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and support up to 8 drives.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter

Advanced 12Gbps SAS RAID adapter with a PCIe 4.0 host interface and with 8GB of onboard cache and a flash-based backup unit. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to 16 drives.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Internal Adapter

Advanced 12Gbps SAS RAID adapter with a PCIe 4.0 host interface and with 8GB of onboard cache and a flash-based backup unit. Custom form factor installs in the server without occupying a PCIe slot. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to 16 drives.

Learn more:

- [Product Guide](#)



### ThinkSystem RAID 940-32i 8GB Flash PCIe Gen4 12Gb Adapter

Advanced 12Gbps SAS RAID adapter with a PCIe 4.0 host interface and with 8GB of onboard cache and a flash-based backup unit. The adapter offers RAID levels 0, 1, 10, 5, 50, 6, and 60 standard, and supports up to 32 drives.

Learn more:

- [Product Guide](#)



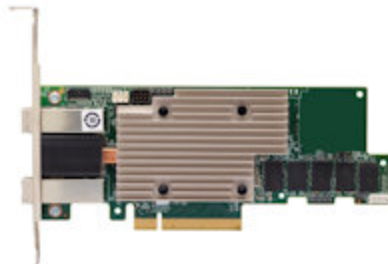
## RAID Controllers for External Storage

### ThinkSystem RAID 930-8e 4GB Flash PCIe 12Gb Adapter

High-performance 12Gbps SAS RAID-on-chip (ROC) adapter for connectivity to external disk enclosures. The adapter comes standard with 4GB of cache and supports RAID levels 0, 1, 10, 5, 50, 6 and 60.

Learn more:

- [Product Guide](#)







## SAS Host Bus Adapters

High performance SAS host bus adapters provide easy and reliable connectivity to either internal or external storage.

Additional resources:

- [Lenovo ThinkSystem RAID Adapter and HBA Comparison Reference](#)

HBAs for Internal Storage	
<p><b>ThinkSystem 430-8i SAS/SATA 12Gb HBA</b></p> <p>The Lenovo ThinkSystem 430-8i SAS/SATA 12Gb HBAs is a high performance host bus adapters for internal storage connectivity in ThinkSystem servers. Two internal x4 mini-SAS HD connectors to connect to eight drives.</p> <p>Learn more:</p> <ul style="list-style-type: none"><li>• <a href="#">Product Guide</a></li></ul>	
<p><b>ThinkSystem 430-16i SAS/SATA 12Gb HBA</b></p> <p>The Lenovo ThinkSystem 430-16i SAS/SATA 12Gb HBA is a high performance host bus adapters for internal storage connectivity in ThinkSystem servers. Four internal x4 mini-SAS HD connectors to connect to 16 drives.</p> <p>Learn more:</p> <ul style="list-style-type: none"><li>• <a href="#">Product Guide</a></li></ul>	
<p><b>ThinkSystem 4350-8i SAS/SATA 12Gb HBA</b></p> <p>High performance PCIe 3.0 host bus adapters for internal storage connectivity in ThinkSystem servers. Two internal x4 mini-SAS HD connectors to connect to 8 drives.</p> <p>Learn more:</p> <ul style="list-style-type: none"><li>• <a href="#">Product Guide</a></li></ul>	
<p><b>ThinkSystem 4350-16i SAS/SATA 12Gb HBA</b></p> <p>High performance PCIe 3.0 host bus adapters for internal storage connectivity in ThinkSystem servers. Four internal x4 mini-SAS HD connectors to connect to 16 drives.</p> <p>Learn more:</p> <ul style="list-style-type: none"><li>• <a href="#">Product Guide</a></li></ul>	

### ThinkSystem 440-16i SAS/SATA PCIe Gen4 12Gb Internal HBA

The Lenovo ThinkSystem 440-16i SAS/SATA 12Gb HBA is a high performance PCIe 4.0 host bus adapters for internal storage connectivity in ThinkSystem servers. Custom form factor installs in the server without occupying a PCIe slot. Four internal x4 mini-SAS HD connectors to connect to 16 drives.



Learn more:

- [Product Guide](#)

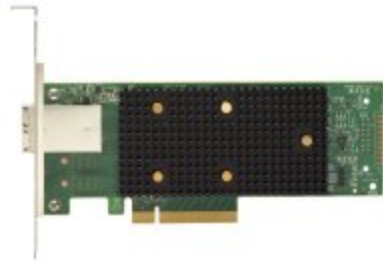
### HBAs for External Storage

#### ThinkSystem 430-8e SAS/SATA 12Gb HBA

High performance host bus adapters for external SAS storage connectivity in ThinkSystem servers. The adapter provides two external x4 mini-SAS HD connectors for a total of eight lanes of 12Gbps SAS.

Learn more:

- [Product Guide](#)

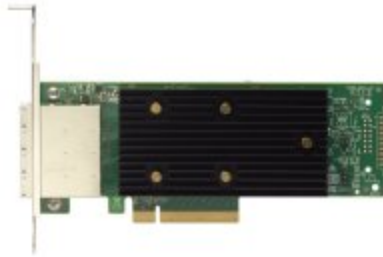


#### ThinkSystem 430-16e SAS/SATA 12Gb HBA

High performance host bus adapters for external SAS storage connectivity in ThinkSystem servers. The adapter provides four external x4 mini-SAS HD connectors for a total of 16 lanes of 12Gbps SAS.

Learn more:

- [Product Guide](#)



#### ThinkSystem 440-16e SAS/SATA PCIe Gen4 12Gb HBA

High performance PCIe 4.0 host bus adapters for external SAS storage connectivity in ThinkSystem servers. The adapter provides four external x4 mini-SAS HD connectors for a total of 16 lanes of 12Gbps SAS.

Learn more:

- [Product Guide](#)



## NVMe Switch and Retimer Adapters

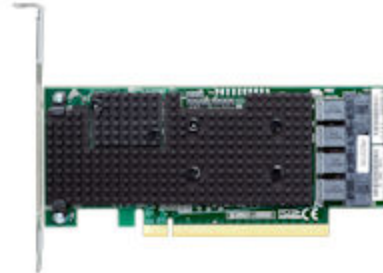
Adapters to enable the use of PCIe NVMe drives in ThinkSystem servers.

Additional resources:

- [Lenovo ThinkSystem RAID Adapter and HBA Comparison Reference](#)

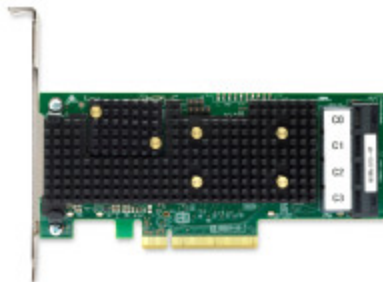
### ThinkSystem 1610-4P NVMe Switch Adapter

A high performance PCIe 3.0 switch based on the Broadcom PEX9733 chipset with a PCIe 3.0 x16 host interface. On supported ThinkSystem servers, the adapter provides four PCIe x4 connections supporting four NVMe drives. Four Mini-SAS HD x4 (SFF-8643) internal connectors.



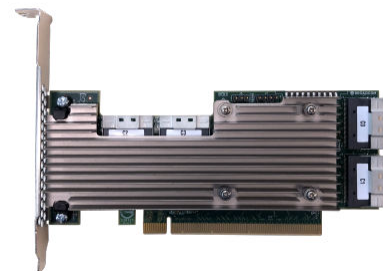
### ThinkSystem 810-4P NVMe Switch Adapter

A high performance PCIe 3.0 switch based on the Broadcom PEX9733 chipset with a PCIe 3.0 x8 host interface. On supported ThinkSystem servers, the adapter provides four PCIe x4 connections supporting four NVMe drives. Four Mini-SAS HD x4 (SFF-8643) internal connectors.



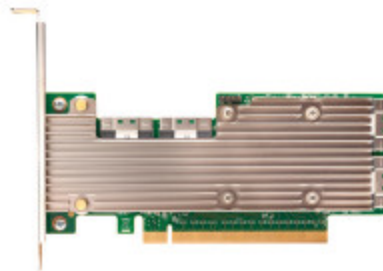
### ThinkSystem 1610-8P NVMe Switch Adapter

A high performance PCIe 3.0 switch based on the Broadcom PEX9749 chipset with a PCIe 3.0 x16 host interface. On supported ThinkSystem servers, the adapter provides four PCIe x8 connections supporting eight NVMe drives. Four Ultraport SlimSAS 8X24 internal connectors.



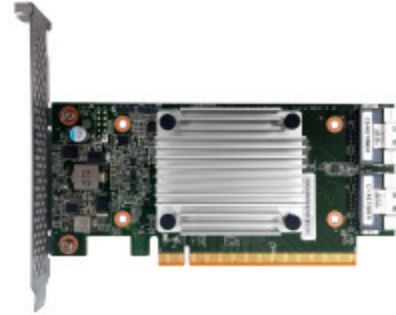
### ThinkSystem 1611-8P PCIe Gen4 Switch Adapter

A high performance PCIe 4.0 switch based on the Broadcom PEX88048 chipset with a PCIe 4.0 x16 host interface. On supported ThinkSystem servers, the adapter provides four PCIe x8 connections supporting eight NVMe drives. Four Ultraport SlimSAS 8X24 internal connectors.



### **ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter**

A high performance PCIe 4.0 retimer based on the Astera Labs PT4161LR chipset with a PCIe 4.0 x16 host interface. On supported ThinkSystem servers, the adapter provides four PCIe x16 connections supporting four NVMe drives. Two Ultraport SlimSAS 8X24 internal connectors.



## Solid State Storage Drives & Adapters

Next generation solid-state technology engineered for balanced performance & endurance in a cost efficient design.

- [SAS and SATA Solid State Drives](#)
- [NVMe Solid State Drives](#)
- [SED \(Self-encrypting\) Solid State Drives](#)
- [M.2 Drives and Adapters](#)
- [NVMe Solid State Storage Adapters](#)

For more information:

- [Lenovo ThinkSystem SSD Portfolio](#) - allows you to search, filter and compare our SSDs

### SAS and SATA Solid State Drives

Cost efficient with optimal performance. Delivering performance, endurance, and power efficiency in a cost-efficient design.

#### Read Intensive, Enterprise Entry and Capacity SAS and SATA SSDs

Optimized for read-intensive workloads with an endurance of less than 3 DWPD.

#### Multi-Vendor Entry SATA 6Gb SSDs

Family of SATA SSDs with Entry endurance and performance specifications. These drives have the benefit of long-life part numbers and are intended to minimize the impact of supplier shortages.

- Performance data shown is the minimum level -- performance may exceed the stated values.
- Replacement drives may not be identical to those drives being replaced.

Learn more:

- [Multi-Vendor SSDs in the SSD Comparison](#)

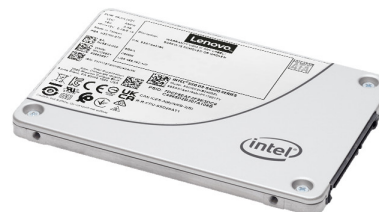


#### Intel S4520 Read Intensive SATA 6Gb SSDs

The ThinkSystem S4520 Read Intensive SATA SSDs use 144-layer Intel 3D NAND TLC Flash Memory technology with a 6Gbps SATA interface to provide an affordable solution with industry leading performance.

Learn more:

- [Product guide](#)



### Intel S4510 Entry SATA 6Gb SSDs

Intel drives using 3D NAND TLC Flash Memory technology with a 6Gbps SATA interface to provide an affordable solution with industry leading performance.

Learn more:

- [Product guide](#)



### Micron 5300 Entry SATA 6Gb SSDs

Micron drives that provide an affordable solution for read-intensive applications such as boot, web servers, lower data rate operational databases and analytics. New 96-layer 3D NAND flash memory. Available in capacities up to 7.68TB.

Learn more:

- [Product guide](#)



### Samsung PM1643a Entry SAS 12Gb SSDs

Samsung drives ideal for high-capacity enterprise applications, with drive capacities up to 7.68TB. Designed for dense storage and with a 12Gb SAS interface, these drives have the capacity and performance needed for large-scale read-intensive applications.

Learn more:

- [Product guide](#)



### Samsung PM893 Read Intensive SATA 6Gb SSDs

Samsung drives suitable for general-purpose and read-intensive workloads. Engineered for greater performance and endurance in a cost-effective design. Available in capacities from 480GB to 7.68TB

Learn more:

- [Product guide](#)



### Samsung PM883 Entry SATA 6Gb SSDs

Samsung drives suitable for general-purpose and read-intensive workloads. Engineered for greater performance and endurance in a cost-effective design. Available in capacities from 240GB to 7.68TB

Learn more:

- [Product guide](#)



### Mixed Use and Enterprise Mainstream SAS and SATA SSDs

Optimized for mixed-intensive application workloads with an endurance of 3-5 DWPD.

#### Intel S4620 Mixed Use SATA 6Gb SSDs

The ThinkSystem S4520 Mixed Use SATA SSDs use 144-layer Intel 3D NAND TLC Flash Memory technology with a 6Gbps SATA interface to provide an affordable solution with industry leading performance.

Learn more:

- [Product guide](#)



#### Intel S4610 Mainstream SATA 6Gb SSDs

Advanced Intel data center SSDs optimized for mixed read-write performance, endurance and strong data protection. Excellent choice as cache in transactional application and high-speed storage for enterprise databases.

Learn more:

- [Product guide](#)



#### Micron 5300 Mainstream SATA 6Gb SSDs

Micron drives that offer an affordable solution for mixed read-write applications such as cache in transactional application and high-speed storage for enterprise databases. Available in a broad selection of sizes, from 240GB to 3.84TB.

Learn more:

- [Product guide](#)



#### Samsung PM1645a Mainstream SAS 12Gb SSDs

Samsung drives with an advanced SAS 12Gbps interface. Mainstream server SSD suitable for mixed read-write-intensive workloads. Available in capacities up to 3.2TB.



#### Samsung PM1645 Mainstream SAS 12Gb SSDs

Samsung drives with an advanced SAS 12Gbps interface. Mainstream server SSD suitable for mixed read-write-intensive workloads. Available in capacities up to 3.2TB.

Learn more:

- [Product guide](#)



### Write Intensive and Enterprise Performance SAS SSDs

Optimized for write-intensive application workloads with an endurance of 10+ DWPD.

#### Seagate Nytro 3732 Performance 12Gb SAS SSD

The ThinkSystem Nytro 3732 Performance 12Gb SAS solid-state drives (SSDs) in capacities of up to 3.2 TB are high-performance SSDs suitable for write-intensive applications of running on ThinkSystem servers. The drives are available in 2.5-inch and 3.5-inch form factors.

Learn more:

- [Product guide](#)



#### Western Digital Ultrastar SS530 Performance SAS 12Gb SSDs

Second generation 3D MLC NAND flash memory technology with a 12 Gb SAS interface to provide a high-performance storage solution. These drives offer high endurance supporting up to 10 DWPD over 5 years meaning they are ideal for write-intensive applications.

Learn more:

- [Product guide](#)



## NVMe Solid State Drives

Ultra Low Latency & High Performance.

Designed to utilize the high bandwidth of PCIe 3.0 in four lanes, and bring high performance, low latency, and consistently amazing performance to I/O-intensive storage workloads.

### Read Intensive and Enterprise Entry NVMe SSDs

Optimized for read-intensive workloads with an endurance of less than 3 DWPD.

#### Intel P5500 Entry NVMe PCIe 4.0 x4 SSDs

General-purpose yet high-performance low-latency drives with a PCIe 4.0 x4 interface. Available in capacities up to 7.68 TB.

Learn more:

- [Product guide](#)



#### Intel P4510 Entry NVMe PCIe 3.0 x4 SSDs

General-purpose yet high-performance low-latency drives with a PCIe 3.0 x4 interface. Available in capacities up to 8 TB.

Learn more:

- [Product guide](#)



#### Kioxia CD6 Read Intensive NVMe PCIe 4.0 SSDs

The ThinkSystem U.3 CD6 Read Intensive NVMe solid-state drives (SSDs) in capacities up to 7.68 TB are advanced data center SSDs from Kioxia that are designed for scale out environments, where read performance, Quality of Service (QoS) and power efficiency are key metrics. The CD6 drives are targeted for general purpose server applications and scale out environments.

Learn more:

- [Product guide](#)



### Kioxia CM6-R Entry NVMe PCIe 4.0 x4 SSDs

General-purpose yet high-performance low-latency NVMe drives from Kioxia (formerly Toshiba) with a PCIe 4.0 x4 interface. Available in capacities up to 7.68 TB.

Learn more:

- [Product guide](#)



### Samsung PM983 Entry NVMe PCIe SSDs

Samsung drives suitable for read-intensive and general-purpose data center workloads. Available in capacities from 1.92 TB to 7.68 TB.

Learn more:

- [Product guide](#)



### Samsung PM1733 Entry NVMe PCIe 4.0 x4 SSDs

Samsung drives with PCIe Gen4 interface for maximum throughput, suitable for read-intensive and general-purpose data center workloads. Available in capacities of 1.92 TB and 3.84 TB.

Learn more:

- [Product guide](#)



### Mixed Use and Enterprise Mainstream NVMe SSDs

Optimized for mixed-intensive application workloads with an endurance of 3-5 DWPD.

### Intel P5600 Mainstream NVMe PCIe 4.0 x4 SSDs

Advanced data center SSDs optimized for mixed read-write performance, endurance, and strong data protection for Lenovo servers. High throughput with a PCIe 4.0 x4 interface.

Learn more:

- [Product guide](#)



### Intel P4610 Mainstream NVMe PCIe 3.0 x4 SSDs

Advanced data center SSDs optimized for mixed read-write performance, endurance, and strong data protection for Lenovo servers. Available in capacities from 1.6TB to 7.68TB.

Learn more:

- [Product guide](#)



### Kioxia CM6-V Mainstream NVMe PCIe 4.0 x4 SSDs

Kioxia advanced data center SSDs optimized for mixed read-write performance, endurance, and strong data protection for Lenovo servers. Available in capacities from up to 6.4 TB.

Learn more:

- [Product guide](#)



### Toshiba KCM51V Mainstream NVMe PCIe 3.0 x4 SSDs

Toshiba advanced data center SSDs optimized for mixed read-write performance, endurance, and strong data protection for Lenovo servers. Available in capacities from 800 GB to 6.4 TB.

Learn more:

- [Product guide](#)



### Toshiba PX04PMB Mainstream NVMe PCIe SSDs

Toshiba advanced data center SSDs optimized for mixed read-write performance, endurance, and strong data protection for Lenovo servers. Available in capacities of 960GB and 1.92TB.

Learn more:

- [Product guide](#)



### Write Intensive and Enterprise Performance NVMe SSDs

Optimized for write-intensive application workloads with an endurance of 10+ DWPD.

#### Intel P5800X Write Intensive NVMe PCIe 4.0 SSDs

The ThinkSystem U.2 P5800X Write Intensive NVMe PCIe 4.0 x4 SSD, built on Intel Optane SSD technology, is the ultimate in high performance solid state drive with ultra-low latency, very high bandwidth, and an endurance of up to 100 drive writes per day, making this drive the best choice for write-intensive high-performance workloads.



Learn more:

- [Product guide](#)

#### Intel P4800X Performance NVMe PCIe SSD

High performance solid state drives with ultra-low latency, very high bandwidth, and an endurance of 30 drive writes per day, making this drive an excellent choice for write-intensive high-performance workloads.



Learn more:

- [Product guide](#)

#### Toshiba PX04PMB Performance NVMe PCIe SSDs

Toshiba advanced data center SSDs optimized for write-intensive performance, endurance, and strong data protection for Lenovo servers. Available in capacities of 800GB and 1.6TB.



Learn more:

- [Product guide](#)

### Self-encrypting Solid State Drives

Self-encrypting drives (SEDs) provide benefits in three main ways:

- By encrypting data on-the-fly at the drive level with no performance impact
- By providing instant secure erasure (cryptographic erasure, thereby making the data no longer readable)
- By enabling auto-locking to secure active data if a drive is misplaced or stolen from a system while in use

### Read Intensive and Enterprise Entry SED SSDs

Optimized for read-intensive workloads with an endurance of less than 3 DWPD.

### Kioxia CM6-R Entry NVMe PCIe 4.0 x4 SED SSDs

General-purpose yet high-performance low-latency NVMe drives from Kioxia (formerly Toshiba) with a PCIe 4.0 x4 interface. Available in capacities up to 7.68 TB.

Learn more:

- [Product guide](#)



### PM1733 Entry NVMe PCIe 4.0 x4 SED SSDs

Samsung drives with PCIe Gen4 interface for maximum throughput, suitable for read-intensive and general-purpose data center workloads. Available in capacities of 1.92 TB and 3.84 TB.

Learn more:

- [Product guide](#)



### KCM5-R Entry NVMe PCIe 3.0 x4 SED SSDs

Toshiba drives with a PCIe 3.0 x4 NVMe interface to provide an high-performance solution for secure read-intensive workloads.

Learn more:

- [Product guide](#)



### 5300 Entry SATA 6Gb SED SSDs

Micron drives that provide an affordable solution for secure read-intensive applications such as boot, web servers, lower data rate operational databases and analytics. New 96-layer 3D NAND flash memory.

Learn more:

- [Product guide](#)



### Mixed Use and Enterprise Mainstream SED SSDs

Optimized for read-intensive workloads with an endurance of less than 3 DWPD.

### 5300 Mainstream SATA 6Gb SED SSDs

Micron drives that provide an affordable solution for secure mixed-read/write applications. 96-layer triple-level cell (TLC) 3D NAND technology.

Learn more:

- [Product guide](#)



### Write Intensive and Enterprise Performance SED SSDs

Optimized for write-intensive application workloads with an endurance of 10+ DWPD.

#### Seagate Nytro 3732 Performance 12Gb SAS SSD

The ThinkSystem Nytro 3732 Performance 12Gb SAS solid-state drives (SSDs) in capacities of up to 3.2 TB are high-performance SSDs suitable for write-intensive applications of running on ThinkSystem servers. The drives are available in 2.5-inch and 3.5-inch form factors. Adheres to the Trusted Computing Group Enterprise Security Subsystem Class cryptographic standard (TCG Enterprise SSC).

Learn more:

- [Product guide](#)



#### SS530 Performance 12Gb SAS SED SSDs

Second generation 3D MLC NAND flash memory technology with a 12 Gb SAS interface to provide a high-performance storage solution. These drives offer high endurance supporting up to 10 DWPD over 5 years meaning they are ideal for secure write-intensive applications.

Learn more:

- [Product Guide](#)



## M.2 Drives and Adapters

M.2 is a solid-state drive (SSD) form factor used as an operating system boot solution or for data storage. Most ThinkSystem servers support M.2 drives with the addition of a supported M.2 adapter, however some servers support an M.2 drive directly on the system board.

### ThinkSystem M.2 Drives and M.2 Adapters

ThinkSystem servers come standard with a dedicated slot supporting an M.2 adapter, supporting one to four M.2 solid-state drives. This solution allows customers to boot from an M.2 drive for an efficient and high-speed storage interface.



Learn more:

- [Product guide](#)
- [Lenovo Engineer video](#)

### NVMe Solid State Storage Adapters

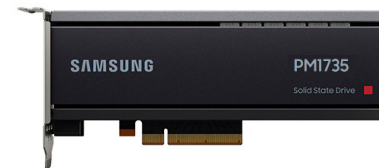
Solid-state storage in the form factor of a PCIe adapter, designed to utilize the high bandwidth of PCIe 3.0 in four lanes. Brings high performance, high bandwidth and low latency to IO intensive storage workloads.

#### Enterprise Mainstream NVMe PCIe Adapters

Optimized for mixed-intensive application workloads with an endurance of 3-5 DWPD.

#### ThinkSystem PM1735 Mainstream NVMe PCIe 4.0 x8 Flash Adapters

Advanced PCIe 4.0 x8 NVMe flash storage adapter that delivers bandwidth of up to 8.0 GB/s for sequential read speed and up to 3.8 GB/s for sequential write speed. Optimized for mixed read-write endurance.



Learn more:

- [Product Guide](#)

#### CM5-V Mainstream NVMe PCIe 3.0 x4 Flash Adapters

Kioxia flash storage adapters, available in capacities from 1.6 TB to 6.4 TB, and optimized for mixed read-write endurance.



Learn more:

- [Product Guide](#)

## Hard Disk Drives

Industry-Leading Solutions. Enterprise SAS & SATA & self-encrypting (SED) hard disk drives. Industry leading HDD solutions increase data reliability, performance, & security.

### Self-Encrypting Drives

Protect data at rest against loss or theft & secure drive retirement, disposal, or repurposing.

Available drives:

- 10K 12Gb SAS SED drives up to 1.2TB
- 7.2K 12Gbps SAS FIPS 140-2 SEDs

Learn more:

- [Lenovo ThinkSystem HDD Summary](#)



### SATA Drives

Lowest-cost storage solution for high-capacity enterprise-class servers.

Available drives:

- 6Gb SATA in capacities up to 18TB

Learn more:

- [Lenovo ThinkSystem HDD Summary](#)



### SAS Drives

SAS drives provide breadth of data center storage solutions ranging from inexpensive Near Line drives to High Performance 15k drives.

Available drives:

- 15K 12Gb SAS drives in capacities up to 900GB
- 10K 12Gb SAS drives in capacities up to 2.4TB
- 7.2K 12Gb SAS drives in capacities up to 18TB

Learn more:

- [Lenovo ThinkSystem HDD Summary](#)



## Backup & Archive Storage

Tape backup & automation solutions can help protect your business with a full complement of tape technologies.

### LTO Tape Drives

Delivers greater capacity & performance, further extending the proven reliability & low-cost ownership to effectively meet demanding backup, archival, & regulatory compliance requirements.

#### LTO Generation 8 (LTO8) Tape Drive

Native storage capacity of 12TB per cartridge (30TB at 2.5:1 compression) and a native data transfer rate of up to 300 MBps (500 MBps compressed).

Learn more:

- [Product Guide](#)



#### LTO Generation 7 (LTO7) Tape Drive

Native storage capacity of 6TB per cartridge (15TB at 2.5:1 compression) and a native data transfer rate of up to 300 MBps (500 MBps compressed).

Learn more:

- [Product Guide](#)



#### LTO Generation 6 (LTO6) Tape Drive

Native storage capacity of 2.5TB per cartridge (6.2TB at 2.5:1 compression) and a native data transfer rate of up to 160 MBps (400 MBps compressed).

Learn more:

- [Product Guide](#)



### **RDX Removable Disk**

Removable disks provide fast random access to data & drag-and-drop functionality, as well as the proven portability & durability of tape.

Features high-capacity shock-resistant cartridges with up to 4.0TB capacity, making your storage options extremely flexible.

Learn more:

- [Product Guide](#)



### **Related product families**

Product families related to this document are the following:

- [Backup Units](#)
- [Drives](#)
- [Host Bus Adapters](#)
- [PCIe Flash Adapters](#)
- [RAID Adapters](#)

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