

ThinkSystem DE Series All-Flash Array

Make decisions faster and more efficiently



The Challenge

It's critical that key business applications run with maximum efficiency, because they directly affect time-to-market, revenue, and customer satisfaction. Because of this, data centers are looking for ways to improve the speed and responsiveness of the applications that control their mission-critical business operations.

One way to differentiate your organization from the competition and accelerate time-to-market is to extract value and insights quickly and reliably from a range of mixed workload environments.

The Solution

The compact 2U Lenovo ThinkSystem DE6000F all-flash (SSD) midrange storage array will turbocharge access to your data to increase its value.

This all-flash array combines industry-leading, enterprise-proven availability features with up to 1M of IOPS, sub-100 microsecond response times, and up to 21GBps of read bandwidth.

Similarly, the entry-level Lenovo ThinkSystem DE4000F all-flash storage system boosts access to your data for greater value in only 2U.

It too combines enterprise-proven availability features with affordable IOPS, sub-100 microsecond response times, and up to 10GBps of read bandwidth.

ThinkSystem DE6000F and DE4000F availability features include:

- Redundant components with automated failover
- Intuitive storage management with comprehensive tuning functions
- Advanced monitoring and diagnostics with proactive repair
- Snapshot copy creation, volume copy, and asynchronous mirroring for data protection.
- Data assurance for data integrity and protection against silent data corruption

Both storage subsystems optimize price/performance, configuration flexibility, and simplicity. They enable you to process your critical business data faster and with better insights, for more effective decision-making.

All-Flash Delivers Performance

The DE6000F delivers 1.0M sustained IOPS and response times measured in mere microseconds. It generates up to 21GBps of read throughput, enough for even your most bandwidth-intensive workloads.

In contrast, the entry DE4000F delivers over 300K sustained IOPS with response times also in microseconds. It provides up to 10GBps of read throughput, plenty for most other jobs.

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2 | ThinkSystem DE Series All-Flash Array

To protect your investment in storage networks, the DE All-Flash Series supports a wide range of high-speed host interfaces. The DE6000F and DE4000F support 16Gb / 32Gb Fibre Channel, 10Gb / 25Gb iSCSI, and 12Gb SAS.

The DE All-Flash Series delivers the performance of more than 2,000 15k rpm HDDs, yet requires only 2% of the rack space, power, and cooling. Because it consumes 98% less space and power, DE Series can significantly improve the overall efficiency of your IT operations while continuing to meet your performance requirements.

Protecting Your Competitive Advantage

Dynamic drive pool (DDP) technology allows storage administrators to simplify RAID management, improve data protection, and maintain predictable performance under all conditions.

This innovative technology minimizes the performance impact of a drive failure and can return the system to optimal condition up to eight times faster than with traditional RAID.

With shorter rebuild times and patented technology to prioritize reconstruction, DDP capabilities significantly reduce exposure to multiple disk failures, offering a level of data protection that cannot be achieved with traditional RAID.

With DE Series, all management tasks can be performed while the storage remains online with complete read/write data access. Storage administrators can make configuration changes, conduct maintenance, or expand the storage capacity without disrupting I/O to attached hosts.

DE Series nondisruptive administration features include:

- **Dynamic volume expansion**
- **Dynamic segment size migration**
- **Dynamic RAID-level migration**
- **Firmware updates**

DE Series all-flash arrays protect against data loss and downtime events, both locally and remotely, using advanced data protection features, including:

- **Snapshot / Volume copy**
- **Asynchronous mirroring**
- **Synchronous mirroring**
- **Full drive encryption**

Eventually, all drives get redeployed, retired or serviced. When this happens, you do not want your sensitive data going out the door with them. Combining local key management with drive-level encryption gives you comprehensive security for data-at-rest with no impact to performance.

XClarity Support

Lenovo XClarity Administrator is a centralized resource management solution that is aimed at reducing complexity, speeding response, and enhancing the availability of Lenovo server systems and solutions. Lenovo XClarity Administrator provides agent-free hardware management for our servers, storage, network switches, hyperconverged and ThinkAgile solutions.

With a simplified administration dashboard, the following functions can be easily achieved:

- **Inventory**
- **Monitoring**

Specifications

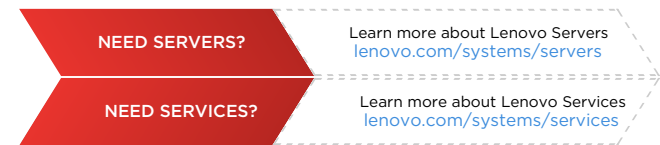
| | DE6000F | DE4000F |
|---------------------------------|---|--|
| Form Factor | Base system: 2U/24 Expansion: 2U/24 | Base system: 2U/24 Expansion: 2U/24 |
| Maximum Raw Capacity | 2.94PB | 2.94PB |
| Maximum Drives | 192 | 192 |
| Maximum Expansion | Up to seven DE240S expansions | Up to 7 DE240S expansions |
| IOPS | 1,000,000 IOPS | 300,000 IOPS |
| Sustained Throughput | Up to 21GBps | Up to 10GBps |
| System Memory | 128GB | 16GB |
| Base I/O Ports (per system) | 4x 10Gb iSCSI (optical) 4x 16Gb FC | 4x 10Gb iSCSI (optical) 4x 16Gb FC |
| Optional I/O Ports (per system) | 8x 16GB/32GB FC 8x 10GB/25GB iSCSI optical 8x 12GB SAS | 8x 16GB/32GB FC 8x 10GB/25GB iSCSI optical 8x 12GB SAS |
| Software Features | Snapshot, Asynchronous mirroring, Synchronous mirroring, Drive Encryption | |
| System Maximums | Hosts/partitions: 512 Volumes: 2,048 Snapshot copies: 2,048 Mirrors: 128 | Hosts/partitions: 256 Volumes: 512 Snapshot copies: 512 Mirrors: 32 |

Why Lenovo

Lenovo is a leading provider of systems for the data center. The portfolio includes rack, tower, blade, dense, and hyperconverged systems, and provides enterprise-class performance, reliability, and security. Lenovo also offers a full range of networking, storage, software, and solutions, as well as comprehensive services that support business needs throughout the IT lifecycle.

For More Information

To learn more about the ThinkSystem DE Series All-Flash Array, contact your Lenovo representative or Business Partner or visit lenovo.com/storage. For detailed specifications, consult the DE Series [DE6000F](#) or [DE4000F](#) All-Flash Array product guides.



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