

SGI InfiniteStorage 5600i Storage System

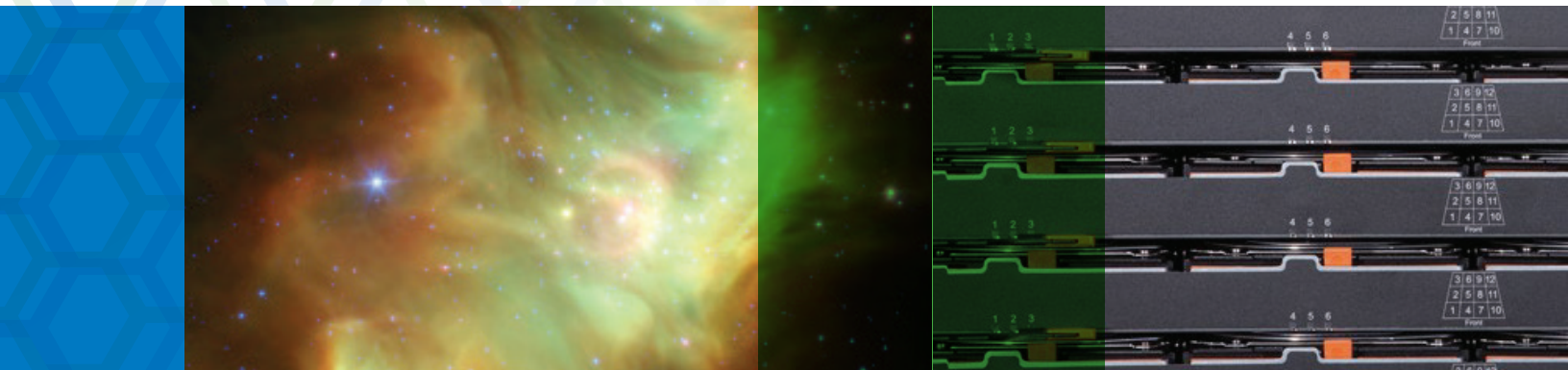
Flagship performance storage purpose-built for HPC

Key Features

Sustaining 12 GB/s to disk

Up to 650,000 IOPs

Modular flexibility



Optimize HPC applications

The InfiniteStorage 5600i storage system was designed with the SANtricity OS adaptive caching algorithms, which address a large range of application workloads. Those workloads range from database, high IOPS, or bandwidth-intensive streaming applications to a mixture of workloads in a high performance storage consolidation point.

Two Versions of the Platform

Two versions of the platform are available: the IS5600i SGI-tuned and the IS5600i-standard. The IS5600i SGI-tuned comes with specially tuned firmware intended to enhance SGI high-performance compute environments.

In addition, the IS5600i-standard version of the platform comes with generic firmware, and is ideal for customers integrating the platform into heterogeneous environments. The IS5600i line offers heterogeneous support with the flexibility to tightly integrate with SGI compute environments, operate as standalone storage, or integrate with other non-SGI compute environments.

Flexible Interface Options

The IS5600i supports a complete set of host or network interfaces designed for either direct server attach or network environments. With multiple ports per interface, the rich connectivity provides ample options and bandwidth for high throughput. The interfaces include quad-lane SAS, iSCSI, FC, and InfiniBand to connect with and protect investments in storage networking.

Balanced Performance

The IS5600i storage system continues the SGI IS5x00 series longstanding heritage of balanced performance designed to support any workload. High-performance file systems and data-intensive bandwidth applications benefit from the IS5600i's ability to sustain high read and write throughput. High performance computing applications benefit from its high IOPS and low latency. Regardless of the application workload, the IS5600i is designed to support maximum performance efficiency.

Maximum Storage Density

Today's storage must keep up with continuous growth and meet exploding capacity requirements. The IS5600i is purpose-built for capacity-intensive environments requiring optimal space utilization and reduced power/cooling requirements. The ultra-dense 60-drive 4U enclosure provides dense storage capacity in a serviceable and high performance system. In addition to reducing the footprint by up to 60% over leading competitors, high-efficiency power supplies and intelligent design lower power and cooling requirements, saving 40%+ on costs.

¹For configurations greater than 240 slots premium feature key(s) will be required.

High Reliability

The IS5600i storage system delivers high-speed, continuous data access. With over 20 years of storage development behind it, the IS5600i is based on a field-proven architecture designed to provide high reliability and greater than 99.999% availability with appropriate configurations and service plans. As part of the IS5x00 family, the IS5600i is covered by AutoSupport for proactive maintenance.

Dynamic Disk Pools

As drive capacities continue to grow, it takes longer and longer to perform a rebuild when drives fail. The IS5600i architecture minimizes the performance impact of a drive failure, increasing performances, efficiency and scalability and returns the system to optimal condition faster than traditional RAID. This unique combination enables a significant improvement in computational efficiency and allows the IS5600i to maintain a high level of performance even under drive failure conditions.

Dynamic Disk Pools eliminate the complexities of RAID management with no idle spares to manage, no reconfiguring of RAID when expanding, and a significantly reduced performance impact following failure of a drive or drives when compared to traditional RAID.

Data Management Security and More

SGI InfiniteStorage System Manager (ISSM) storage management software offers extensive configuration flexibility, which allows optimal performance tuning and complete control over data placement. With its dynamic capabilities, ISSM software supports on-the-fly expansion, reconfigurations, and maintenance without interrupting storage system I/O.

When data is entrusted to your storage, protecting it is essential. With advanced ISSM protection technologies such as drive encryption, proactive monitoring, background repair, data assurance supporting T10PI standards for data integrity, and extensive diagnostic features, data is fully protected when it reaches the storage system.

Modular Flexibility

The IS5600i offers multiple form factors and drive technology options to best meet requirements. The ultra-dense 60-drive system shelf supports up to 360TB in just 4U. It is perfect for environments with vast amounts of data and limited floor space. Its 24-system shelf combines low power consumption and exceptional performance density with its cost-effective 2.5-inch drives. And the 12-drive shelf is a great fit for cost-conscious organizations that need to deploy both performance and capacity. All three shelves support IS5600i controllers or can be used for expansion, enabling optimized configurations that best meet performance, capacity, or cost requirements.



12-bay enclosure



24-bay enclosure



60-bay enclosure

SGI IS5600i System Specifications

sgi.com/storage

Performance (Raid 5)	• Maximum burst I/O rate from cache: 900,000 IOPs (estimated)* • Maximum sustained I/O rate from SSD drives: 400,000 IOPs (estimated)* • Maximum sustained I/O rate from SAS drives: 150,000 IOPs (estimated)* • Maximum sustained transfer rate from drives: 12,000 MB/s (estimated)*
Host Connection (Dual Controller)	• Eight 12 Gb SAS • Eight 16Gb FC • Eight 10G iSCSI • Four 56 Gb IB FDR
Drive Connections (Dual Controller)	• Two 6Gb/s SAS drive connections
Drive Types Supported	• SAS, NL SAS, SED and SSDs
Maximum Number of Drives Supported	• 12bay/2U/3.5" - 192 drives • 24bay/2U/2.5" - 384† drives • 60bay/4U/2.5" or 3.5" - 360† drives • Enclosures and drive types can be intermixed in a system. All models are capable of reaching 384† disk drives when configured with intermixed drive shelves.
OS Version	• ISSM
Segment Size Value	• 8K, 16K, 32K, 64K, 128K, 256K, 512K
High-Availability Features	• Dual-active controller with automated I/O path failover • Dynamic Disk Pools Dynamic Rebalancing for drive addition, or loss • Supports Dynamic Disk Pools and RAID levels 0, 1, 3, 5, 6, and 10 • Redundant, hot-swappable storage controllers, disk drives, power supplies, and cooling fans • Automatic drive failover and detection and rebuild using global hot spare drives • Mirrored data cache with battery backup and destage to flash • SANtricity® Proactive Drive Health monitoring identifies problem drives before they create issues • SANtricity Persistent Monitor makes periodic copies of the storage system configuration • 99.999% Availability (with appropriate drive configurations and service plans)
Software Features Standard Features	• Dynamic Disk Pooling • Dynamic Volume Expansion • Dynamic Capacity Expansion • Dynamic RAID Level Migration • Dynamic Segment Size Migration • Persistent Monitor • Proactive Drive Health Monitoring • Nondisruptive Firmware Upgrades • Media Scan with autoparity check and correction • AutoSupport • Drive Encryption (Except countries where prohibited) • Hyper Performance • SANShare 512 • SSD feature key
Optional Premium Features Extended-Value Software	• SSD Cache • Unlock between 241-300 slots • Unlock between 301-384 slots • Volume Copy • Snapshot Consistency Group • Thin Provisioning • Checkpoint Asynchronous Mirroring • Remote Volume Mirroring - 16

†For configurations greater than 240 slots premium feature key(s) will be required.

††Calculated upon typical drive type, may vary

*Numbers are based on a minimum of 100 disk drives.

**available on SGI-tuned version of the platform

SGI IS5600i System Specifications (continued)

sgi.com/storage

Product and Manufacturing Directive Compliance	• Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS, 2002/95/EC) • Waste Electrical and Electronic Equipment Directive (WEEE) • European Technical Standards Institute (ETSI)	
Power Supply Attributes	• Dual output up to 725 watts maximum wide-ranging AC input (12-Bay and 24-Bay) • Dual output up to 1,750 watts maximum wide-ranging AC input (60-Bay) • All drive trays must have dual power supplies	
Temperature	• Operating range: 10°C to 40°C (50°F to 104°F) — for 12 and 24 bay • Operating range: 10°C to 35°C (50°F to 95°F) — for 60 bay • Storage range: -10°C to 50°C (14°F to 122°F) • Transit range: -40°C to 60°C (-40°F to 140°F) without the battery	
Supported Operating Systems	• Red Hat® Enterprise Linux®, Novell® SUSE™ Linux Enterprise Server	
Dimensions (Controller and Drive Module)	Height x Width (incl. mounting brackets) x Depth (incl. drive CRUs and endcaps)	
IS5600i-12: 12 3.5-in drive enclosure	• 3.4" x 19" x 21.75" 8.64cm x 48.26cm x 55.25cm	
IS5600i-24: 24 2.5-in drive enclosure	• 3.47" x 19" x 19.6" 8.81 cm x 48.26 cm x 49.78 mm	
IS5600i-60: 60 3.5-in/2.5-in drive enclosure	• 7.0" x 19.0" x 32.5" 17.78 cm x 48.26 cm x 825.5 mm	
Dimensions (Controller and Drive Module)	Height x Width (incl. mounting brackets) x Depth (incl. drive CRUs and endcaps)	
IS5600i-12: 12-Bay enclosures with (12) 3.5-in drives	• 59.52 lbs (27 kg)	
IS5600i-24: 24-Bay enclosures with (24) 2.5-in drives	• 57.32 lbs (26 kg)	
IS5600i-60: 60-Bay enclosures with (60) 3.5-in drives	• 232.00 lbs (105.2 kg)	
Air Flow and Heat Dissipation††	Controller Enclosure	Drive Enclosure
IS5600i-12: with (12) 3.5-in drives	• 505W (1724 BTU/hr)	• 223W (761 BTU/hr)
IS5600i-24: with (24) 2.5-in drives	• 551W (1878 BTU/hr)	• 268W (916 BTU/hr)
IS5600i-60: with (60) 3.5-in drives	• 1135W (3872 BTU/hr)	• 847W (2889 BTU/hr)
ISSM maximums		
Hosts/partitions	• 512	
Volumes	• 2,048	
Snapshot copies	• 2,048	
Mirrors	• 128	

†For configurations greater than 240 slots premium feature key(s) will be required.

††Calculated upon typical drive type, may vary

*Numbers are based on a minimum of 100 disk drives.

**available on SGI-tuned version of the platform

About SGI

SGI is a global leader in high performance solutions for compute, data analytics and data management that enable customers to accelerate time to discovery, innovation, and profitability.

For More Information

Please contact an SGI sales representative at 1-800-800-7441 or visit www.sgi.com.

Global Sales and Support: sgi.com