Snap Server™ 700i Series

Enterprise-Class iSCSI Storage Systems

Key Features

SAS or SATA, scalable to 36TB

High performance, up to 386MB/s throughput

Easy to manage with Adaptec Storage Manager

Synchronous mirrored volumes with automatic failover

Seamless backup and recovery via application-consistent snapshots

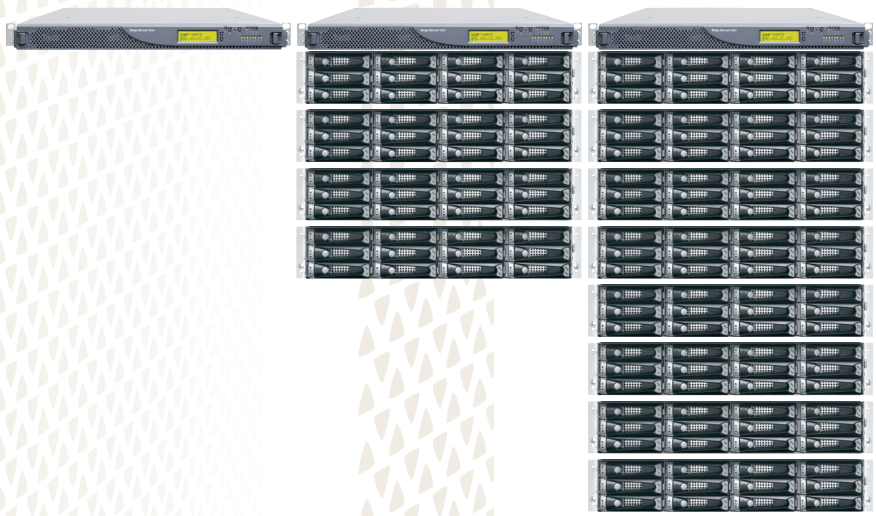
Tight integration with Adaptec RAID controllers

Ideal for use with Windows, Linux, and VMware

Overview

Businesses streamline their IT infrastructure by moving from a piecemeal approach where each server has its own direct attached storage (DAS) to one where an iSCSI RAID storage system is used to provide disk capacity to multiple servers through an IP-based storage area network (IP SAN). This consolidated storage has the economic benefit of being easier to administer than DAS, freeing time for IT personnel to focus on more strategic projects. Because storage is easily apportioned to servers as needed, while they are up and running, there is no need to over-provision them with disks when they are installed, saving money. The risk of a business disruption because a server runs out of disk capacity is minimized.

The RAID storage system provides significantly better storage to the servers than DAS. It is faster because it uses multiple hard drives in parallel to provide increased performance.



Modular, expandable iSCSI disk capacity from 1TB to 36TB per storage system

RAID technology is utilized to ensure that data will not be lost, and that business operations will continue uninterrupted, when a hard drive fails. Backups complete significantly faster because the backup server can access the data to be protected directly from the RAID storage system, without burdening critical business servers.

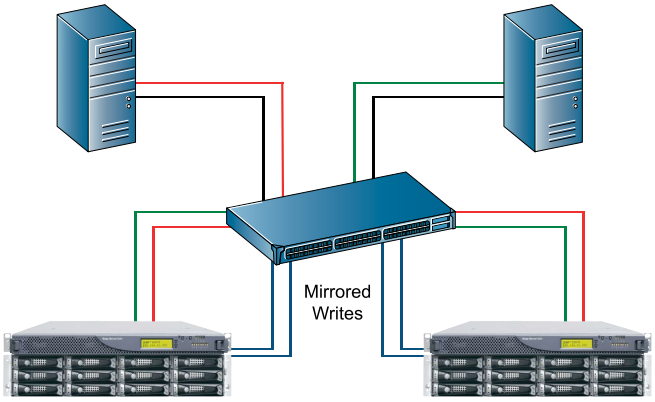
Snap Server 700i Series storage systems provide your Windows or Linux application servers with enterprise-class iSCSI storage that is economical, flexible, scalable, and easy to manage. They are designed for ultimate uptime, and grow modularly with your needs.

Flexible and Scalable

The Snap Server 700i Series by Adaptec delivers higher performance because data is spread over multiple disks, permitting disk operations to be performed in parallel. Snap Server 700i Series storage systems are 1U rack mount units that contain 4 hot-swappable 250GB, 500GB, or 750GB SATA II hard drives for a total capacity of 1TB, 2TB, or 3TB. A unit is also available with 4 hot-swappable 300GB SAS drives for a total capacity of 1.2TB. Add capacity modularly using up to eight 2U Adaptec SANbloc S50 expansion chassis, each of which houses up to 12 hot-swappable drives, to reach total combined capacities as high as 36TB. Mix and match SATA II and SAS drives within the SANbloc S50 to optimize around highest capacity or highest performance. Up to 4 Gigabit Ethernet ports are available to handle demand from one to 512 servers with class-leading performance of up to 386MB/s while providing path redundancy to the storage system.

Easy to Manage

Snap Server 700i Series storage appliances are Microsoft Simple SAN Component compliant, and ship with automated, easy



Configuring two servers in a Microsoft cluster with dual paths to two mirrored Snap Server 700i Series storage systems provides the utmost reliability for the most demanding applications.

to follow setup wizards to significantly reduce setup time. The auto-provisioning wizard performs all of the tasks necessary to add iSCSI storage to a Microsoft Windows host. It guides the user through creating disk pools, assigning RAID levels and hot spares, and defining iSCSI LUNs, as well as performing all of the tasks on the host side, such as setting up multi-pathing, associating iSCSI LUNs with drive letters, formatting the new drives, and establishing CHAP security between the host server and the Snap Server 700i Series storage system. Ongoing maintenance is easy and powerful, as drives can be added to any RAID pool, and LUNs can be grown while the storage system is online and being used by 24x7 applications. RAID levels for a given disk group can even be changed on the fly. SMART reporting and background scrubbing keeps you informed that your storage is operating at peak efficiency. You can even boot your diskless servers from LUNs on the Snap Server 700i Series to save money, reduce IT complexity, and quickly recover from server failures.

Designed for Uptime

Snap Server 700i Series storage systems utilize redundant, hot-swappable fans and power supplies for ultimate reliability. Hard drives are hot-swappable, and are driven by the Adaptec RAID controller, which delivers the industry's most complete protection. Adaptec RAID controllers lead the industry, powering over 50% of servers worldwide. When a drive fails, a hot spare can be instantly used to rebuild the RAID group while it is being used. Should power go down, battery-backup on the RAID controller holds information for 72 hours, and a UPS can signal the storage system to gracefully shut down. The fans, power supply, and temperature, as well as drives are constantly monitored, and SNMP traps and email messages are sent to inform management consoles and administrative personnel of the need for attention.

High availability is provided though a variety of class-leading features. Support for Microsoft Cluster Services permits two servers to share volumes in the Snap Server 700i Series. Should one server fail, the other will pick up operations instantly to keep critical applications such as Exchange or SQL Server up and running. The Snap Server's DPM MPIO driver is installed on Windows servers to provide multiple paths for performance and to protect against a path failure to the storage system. Lastly, two Snap Server 700i Series can be set up to synchronously mirror all information written to a given volume on one unit to a corresponding volume on the other. Should one Snap Server 700i Series fail, the other will pick up operations instantly with no need for manual intervention. Up to 256 snapshots can be scheduled or initiated from any VSS requester running on a Windows server, such as backup and restore, replication, or other management software. Transportable VSS hardware snapshots facilitate high performance backups in a SAN.

Ideal for Use with Windows, Linux, and VMware

The Snap Server 700i Series has been extensively tested for compatibility with Microsoft Windows, Red Hat and SuSE Linux, and VMware ESX Server. Snap Server 700i Series storage systems adhere to key Microsoft standards including compatibility with the Microsoft iSCSI initiator that ships with Windows Server 2003 and Windows XP. The VSS hardware provider takes up to 256 snapshots within the storage system, and makes them available for instant recoveries or to another server on the SAN that is responsible for performing backups or replication. The VDS provider permits a Windows system to administer the Snap Server 700i Series storage system from within familiar Windows administration utilities. Microsoft Clustering Services support keeps mission-critical applications such as Exchange and SQL Server up and running if a server fails.

Detailed Features

Flexible and Scalable

Enterprise-class Storage for 1 to 512 Servers	
iSCSI target	Powered by the Adaptec OnTarget™ OS, which is based on Linux and tuned for delivering iSCSI storage using a hardware RAID controller with blazing performance and unsurpassed flexibility and reliability to meet the most demanding storage requirements.
IP SAN	Consolidate storage from several servers onto the Snap Server 700i Series to increase their storage performance and reliability while gaining flexibility in managing and allocating storage from a central storage resource.
1U rack-mountable base chassis	Powered by a 2.6GHz Opteron processor with up to 2GB of DDR RAM, optional dual power, and 3 or 4 GigE I/O ports for high performance and path redundancy.
Base capacities of 1TB, 2TB, or 3TB of SATA II drives or 1.2TB of SAS drives	Uses four 250GB, 500GB, or 750GB hot-swappable SATA II drives or four 300GB hot-swappable SAS drives to deliver excellent I/O performance, as disk operations can be spread across them.

Cost-effective Modular Expansion	
2U modular expansion	Expand with 1 or more 2U SANbloc S50 expansion chassis, each of which can house up to 12 hot-swappable drives.
SATA II and SAS drives	Mix-and-match 250/500/750GB SATA II drives, 146GB 15K RPM SAS drives, and 300GB 10K RPM SAS drives within the SANbloc S50 expansion chassis.
Total SANbloc capacity	Up to 33TB with all SATA II drives, a maximum of 44 drives using 4 SANbloc S50s. Up to 28.8TB with all SAS drives, a maximum of 96 drives using 8 SANbloc S50s.

Additional I/O Ports	
2 USB 2.0 ports	Useful for communicating with an uninterruptible power supply to shut down gracefully in the event of a prolonged power failure.

Scalability and Performance	
Category-leading performance	Up to 386MB/s throughput is over 3 times faster than popular competing storage systems.
Services up to 512 concurrent host connections	Up to 50 times the number of popular competing storage systems.
Provides up to 512 volumes	Up to 8 times the number of popular competing storage systems.
Maximum volume capacity	Breaks the 2TB volume barrier. Supports volumes as large as 18TB with today's disk capacities.
Support for multiple iSCSI connections per session	Increases performance and fault tolerance to satisfy demanding server applications.
Jumbo frames	Supported by modern switches and GigE ports on servers to increase I/O performance.

Easy to Manage

Management Software	
Wizard for out-of-box setup Wizard for entire SAN setup Wizard for creating OS volumes	Fastest time to available storage from power-on to volume availability. The Adaptec Storage Manager simplifies initial setup as well as the creation of RAID disk pools and volumes in any number of Snap Server 700i Series storage systems. Further, it automatically assigns a drive letter and formats volumes on the Windows host side.
Boot from SAN	Boot your Windows servers directly from LUNs in the Snap Server 700i Series to reduce IT complexity and eliminate the cost of requiring a boot disk in the server. Should the server fail, a new one can be instantly booted from the LUN for rapid recovery. Utilizes emBoot software, which works with standard Ethernet NICs. For the highest performance requirements, QLogic iSCSI HBAs are also supported.
No serial cable required for out-of-box setup	Initial setup and ongoing management of the Snap Server 700i Series is performed through the graphical user interface via a network connection.
SAN-wide management from a single GUI	Use Adaptec Storage Manager to discover, manage, and monitor host-side as well as target-side systems in your IP SAN network, providing a complete and seamless iSCSI management application.
Microsoft VDS provider	Manage the Snap Server 700i Series from Microsoft Storage Manager for SANs or other SAN managers that utilize VDS.
Email events SNMP traps	Receive status information such as drive failure, RAID pool in rebuild state, and new RAID pool created through email and/or SNMP traps.
Full CLI support	A fully functional command-line interface for advanced users.

Management Software (cont.)	
SAN-wide firmware update	Adaptec Storage Manager simplifies firmware deployment by pushing updates across the SAN from your administrator's desktop.
Read/write and read-only access for storage administration	Set up appropriate access permissions for storage administrators.
Support for iSNS Server and SLP (Service Locator Protocol)	Simplifies connecting hosts to iSCSI targets and communicates status information back to hosts.
Scheduler for snapshot	Adaptec Storage Manager schedules hourly, daily, weekly, or monthly snapshots; and specify how many you want to retain of each (up to 16).

Capacity Management	
Online RAID pool and volume capacity expansion	Easily add 1 or more disks to a RAID 0, 5, or 6 RAID pool. Then any iSCSI LUNs exposed from that pool can be increased to provide additional storage to servers in need.
Grow a volume through Adaptec Storage Manager for Windows, Linux, or VMware	Convenient GUI utility allows volumes to be created, deleted, or grown to meet changing needs.
Grow a volume directly from the Microsoft Storage Manager for SANs utility	Using the Snap Server 700i Series VDS provider, Microsoft's Storage Manager for SANs can extend your iSCSI volume.
RAID level migration	Flexibility to accommodate changing needs • RAID 0 to RAID 0, 5, 10 • RAID 1 to Simple Volume, RAID 5, 10 • RAID 5 to RAID 0, 5, 10, 6 • RAID 6 to RAID 5, 6 • RAID 10 to RAID 0, 5
Remote management	Manage, grow, and monitor your Snap Server 700i Series storage system from anywhere on your network using Adaptec Storage Manager.
Import/export RAID Pool	Move disks between Snap Server 700i Series storage systems.

Security	
CHAP authentication	Provide 1-way or 2-way authentication for securing your data
SRP	Provides secure remote password

Designed for Uptime

Hardware Protection	
Redundant, hot-swappable fans, power supplies	Maximize the uptime of your storage
Hot-swappable disk drives	Easy to replace failed disks, identified by a fault LED, with automatic rebuild for simplified management
Adaptec hardware RAID controller	The proven, industry-leading solution that powers over 50% of RAID servers
Hardware RAID 0, 1, 1E, 5, 6, 10, 50, 60	Includes the industry's most complete RAID protection
Hot spare disk drive	Available for automatic rebuild on disk failures.
72 hours of battery-backed RAID cache	Maintains consistency of the RAID cache over prolonged power outages.
Background data scrubbing	Keeps your data "fresh" by scanning the disks in the background to ensure your data stays consistent.
SMART reporting	Alerts for predictive disk failures by monitoring certain online hard drive activities
UPS support with graceful shutdown	System will power down gracefully on message from UPS that battery is low.
Enclosure monitoring	Includes fan, power supply, and temperature monitoring; drive failures; and managing drive LEDs.

High Availability	
Synchronous mirrored volumes	For Windows hosts, all writes to a volume in one Snap Server 700i Series are synchronously sent to a volume in a second Snap Server 700i Series to provide a high level of fault tolerance.
Automated failover of mirrored volumes	In the event of a path or Snap Server 700i Series failure, Windows applications will automatically switch to the second Snap Server 700i Series without interruption or user interaction.
Wizard to create mirrored volumes	Simplifies setup and management of mirrored volumes.
Microsoft Windows Multipath (MPIO)	Protects against GigE data path failure and Snap Server 700i Series port failure.
Microsoft Windows Cluster Support	The Snap Server 700i Series can serve as shared storage to a Microsoft Cluster. In the event that one of the clustered servers fail, the other will ensure continuously available operation.

Backup and Recovery	
Application-consistent snapshots	Supports Microsoft VSS snapshots initiated by a VSS requestor or from the Adaptec Storage Manager. Snapshots can be created on a schedule or on demand.
Scheduled snapshots	Use Adaptec Storage Manager or the CLI to schedule hourly, daily, weekly, or monthly snapshots; and specify how many you want to retain of each.
Read-only or read-write snapshots	Fast recovery times are possible by mounting previously taken snapshots as read-only or read-write.
Snapshot sets	Snapshot multiple volumes at one time to ensure application consistency.
Wizard for creating and scheduling snapshots	Simplifies setup and management of application-consistent snapshots.
Recovery points between backups	Supports up to 256 snapshots per volume or per system.
Clone volume	Use the CLI to clone an active volume for data mining or testing.
Snapshot rollback	Use the CLI to choose a point in time to roll back any offline volume.
Snapshot retention policy	Use Adaptec Storage Manager to establish a snapshot retention policy such as keep all or keep the last 1 to 16.
Microsoft VSS hardware provider	Creates snapshots on the Snap Server 700i Series in response to a VSS snapshot request.
Microsoft hardware transportable snapshots	Snapshots created within the Snap Server 700i Series can be utilized by any Windows server on the SAN. This feature is commonly used by backup and restore applications.

Ideal for Use with Windows, Linux, and VMware

Microsoft Application Server Compatibility	
Microsoft Exchange support; Microsoft SQL Server support; Microsoft Sharepoint Server support	Uses Microsoft's VSS architecture for seamless application-consistent snapshots and backups. Also works with Microsoft's MPIO architecture for ensuring high-availability configurations.

Linux Compatibility	
Compatible with Linux iSCSI initiator, 32- and 64-bit	Thoroughly tested with Linux operating systems. Visit the Adaptec web site for a complete compatibility list.

VMware Compatibility	
Compatible with VMware ESX iSCSI initiator	Thoroughly tested with VMware ESX operating systems. Visit the Adaptec web site for a complete compatibility list.

Microsoft Windows Compatibility	
Compatible with Microsoft's iSCSI initiator, 32- and 64-bit	Thoroughly tested with Microsoft operating systems. Visit the Adaptec web site for a complete compatibility list.
Microsoft VSS hardware provider	Creates snapshots on the Snap Server 700i Series in response to a VSS snapshot request.
Microsoft VDS provider	Manage the Snap Server 700i Series from Microsoft Storage Manager for SANs or other SAN managers that utilize VDS.
Microsoft MPIO support	Protects against GigE data path failure and Snap Server 700i Series port failure.
Microsoft hardware transportable snapshots	Snapshots created within the Snap Server 700i Series can be utilized by any server on the SAN. This feature is commonly used by backup and restore applications.
Microsoft Windows Cluster support	The Snap Server 700i Series can serve as shared storage to a Microsoft Cluster. In the event that one of the clustered servers fail, the other will ensure continuously available operation.
Microsoft Boot-From-SAN Initiative	Boot your Windows servers directly from LUNs in the Snap Server 700i Series to reduce IT complexity and eliminate the cost of requiring a boot disk in the server. Utilizes emBoot software, which works with standard Ethernet NICs. For the highest performance requirements, the QLogic iSCSI HBAs are also supported.

Snap Server 700i Series Comparison

	Snap Server 720i	Snap Server 720i	Snap Server 730i	Snap Server 750i
Base Capacity	1TB	2TB	3TB	1.2TB
Base Drives	4 x 250GB	4 x 500GB	4 x 750GB	4 x 300GB
Base Drive Type	SATA II	SATA II	SATA II	SAS
GigE I/O Ports	3 Autosensing 10/100/1000Base-T, RJ-45 network connections	3 Autosensing 10/100/1000Base-T, RJ-45 network connections	4 Autosensing 10/100/1000Base-T, RJ-45 network connections	4 Autosensing 10/100/1000Base-T, RJ-45 network connections
Processor Speed	2.6 GHz	2.6 GHz	2.6 GHz	2.6 GHz
DDR Memory (std / max)	1GB / 2GB	1GB / 2GB	2GB / 2GB	2GB / 2GB
Power	Single std / dual optional	Single std / dual optional	Dual standard	Dual standard
Peak IOmeter Throughput	257 MB/s	257 MB/s	368 MB/s	386 MB/s

Hardware Technical Specifications

Physical

- **Width:** 17.5 in (444.5 mm)
- **Height:** 1.75 in (44.45 mm) 1U
- **Depth:** 29.25 in (743 mm)
- **Weight:** 41 lbs (18.6 kg)

Mounting

- Custom 19” rack mount slide rails included
- Minimum rack depth 32” (812.8 mm)

Agency Certifications

- UL, cUL, CE, FCC Class A, TuV, Nemko Standard LCD Display, C-Tick C-Tick added for Australia
- Backlit, 2 line, STN 16 character with system ID, IP address

Power

- Each chassis supports up to 2 hot-swappable autosensing current shared power supplies.
- **Power Rating:** 400W, 100-240VAC, 50 – 60Hz, autosensing
- **Input Current:** 3.4A peak for 115VAC, 1.7A peak for 230VAC
- **Power Consumption:** 390W peak
- **Heat Dissipation:** 1057 BTUs/hr

Environmental Limits, Operating

- **Temperature:** 50° F to 95° F (10° C to 35° C)
- **Non-Condensing Humidity:** 20% to 80%
- **Vibration:** 0.1G at 10-300Hz random for up to 120 min.
- **Shock:** 6 pulses of 33G for up to 2ms
- **Altitude:** 0 ft. to 10,000 ft. (0 m to 3,048 m)

Environmental Limits, Non-operating

- **Temperature:** 14° F to 149° F (-10° C to 65° C)
- **Non-Condensing Humidity:** 5% to 95%
- **Vibration:** 2G at 5-500Hz for 90 min.
- **Altitude:** 0 ft. to 35,000 ft. (0 m to 10,668 m)

Included with Unit

- European, UK and US power cable
- **Snap Server 720i:** 3 x Cat5 Ethernet cables
- **Snap Server 730i:** 4 x Cat5 Ethernet cables
- **Snap Server 750i:** 4 x Cat5 Ethernet cables
- Custom 19” rack mount slide rails

Warranty

Snap Server hardware and software are backed by world-class service and support to protect your investment from downtime and provide you with complete peace of mind.

Standard services with the Snap Server 700i Series include:

- Three-year limited hardware warranty, return to depot
- 90-day software support

Support

Today’s mission-critical environments require maximum uptime and rapid resolution should problems arise. A comprehensive suite of service and support upgrade options help you protect your business operations. By providing 24 x 7 Technical Support, enhanced hardware warranty coverage, exclusive access to all software updates, and even same day onsite support, you can select the options that best fit your business and resource requirements. For more information about services, please contact your distributor, or call us at 1-888-343-7627.

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