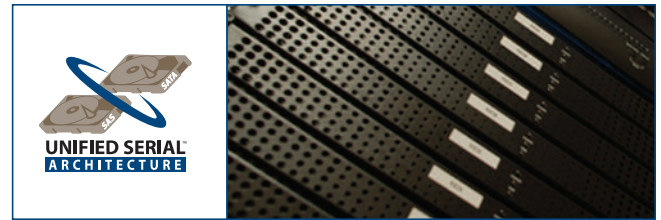


# Maximize ROI with Unified Serial Flexibility



By Robert Cox, Sr. Product Marketing Manager, Adaptec, Inc.

Companies looking to invest in their data center today have four technologies from which to choose: Parallel SCSI, Fibre Channel, Serial ATA (SATA), and Serial Attached SCSI (SAS). Parallel SCSI and Fibre Channel have long been the gold standard in performance for mission-critical data; however, with the industry transition from parallel to serial, Parallel SCSI is on the decline, and Fibre channel has some significant drawbacks that have limited its deployment. Start with the huge initial capital cost of installing a completely separate Fibre Channel infrastructure. Then, there is the high price tag of Fibre Channel disks each time capacity must be added and also the cost of having a Fibre Channel expert on staff.

SATA is the standard for cost-effective, high-capacity storage, with the benefit of providing potentially massive storage capacity for the lowest price per gigabyte. There is no need for new infrastructure or for a resident SATA expert. However, SATA traditionally has not provided the reliability required for storing mission-critical data, and with its one-port-to-one-disk or device restrictions, scaling can increase system complexity, requiring the addition of a new SATA controller whenever the 8 or 12 ports on the existing controller are used up.

## Enter SAS

SAS overcomes the limitations of both Fibre Channel and SATA and provides the flexibility to create a cost-effective solution with storage for both mission-critical and high-volume data. SAS components, including controllers and disk drives have been designed for demanding 24/7 enterprise-class storage of mission-critical data. Yet, SAS also provides the ability to integrate high-capacity SATA drives for

massive secondary storage in the same storage system, connected to the same controller as the SAS drives. Because SAS controllers support scalability to 256 devices using SAS expanders, storage can be expanded to tens of terabytes using one controller, no matter which types of disks or devices are connected to it.

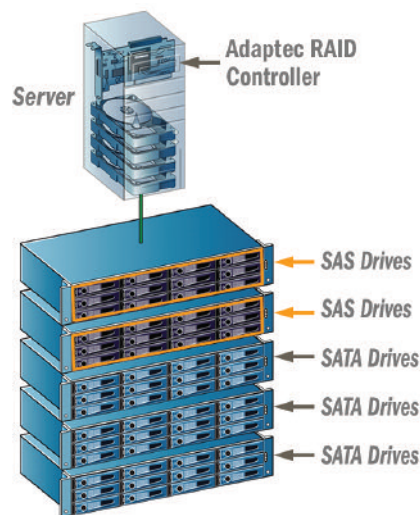


Figure 1. SAS provides the ability to leverage cost-effective, high-capacity Serial ATA (SATA) disk drives or high-performance Serial Attached SCSI (SAS) drives, or both, in a single storage system.

This flexibility maximizes ROI by allowing mission-critical and secondary data to be stored on the most cost-effective media for that data type. It also simplifies purchasing decisions. Once a SAS controller is installed, a data center manager could start with primarily SATA disks, then re-allocate storage or upgrade the system simply by swapping in SAS disks. Adding storage is as simple as connecting a new JBOD with SATA or SAS disks. And, all of these tasks and support can be handled by the existing IT staff.

For data centers built on parallel SCSI, SAS provides the added benefit of being able to easily evolve to a new technology. Simply installing a SAS controller in the same box as the parallel SCSI controller, allows the company to take advantage of all the benefits of SAS without scrapping the legacy SCSI investment.

Systems Integrators also gain ROI from choosing SAS, which enables them to build most of their solutions using a single type of components. There is less inventory to stock and fewer technologies to support, so overhead is reduced. Plus, they gain the ability to migrate customers as their needs change simply by swapping disks, making it easier to keep installed customer solutions up to date.

## Adaptec Provides the Solution

Adaptec stresses the flexibility of SAS with its line of Unified Serial™ controllers, based on SAS technology, yet designed to take full advantage of the ability to integrate high-performance SAS drives and high-capacity SATA drives within the same storage system.

Our latest Unified Serial controllers also provide a rich feature set, starting with PCI-Express (PCIe) connectivity, broad support for standard and Open Source operating systems, and a fixed data cache up to 256MB. Management is simplified with the Adaptec Storage Manager™, a single interface for controlling all the Adaptec RAID cards in the storage infrastructure. Advanced data protection provides extended RAID choices, including RAID 5EE for improved hot spare performance and RAID 6 for dual-drive failure protection.

## Maximize ROI with SAS Flexibility



Figure 3: Adaptec's Series 5 line of Unified Serial RAID controllers offers the broadest line of advanced data protection.

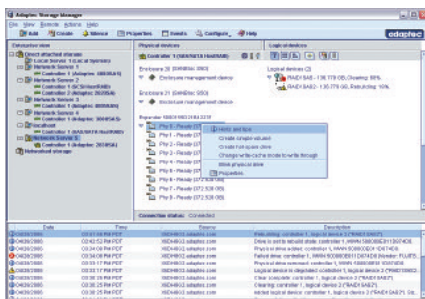


Figure 2: Adaptec Storage Manager™ provides centralized management of all Adaptec RAID products, with pop-up tips and online help to simplify the creation and management of RAID arrays.

flexibility of SAS to achieve maximum ROI and the right balance of performance and capacity for all storage needs.

### Summary

It makes sense to maximize the extraordinary value of SATA drives by deploying them with Unified Serial (SATA/SAS) Controllers, rather than with SATA controllers. SAS was specifically architected to deliver seamless compatibility with SATA drives, enabling SAS controllers to bring greater scalability and lower cost-per-drive to SATA deployments. Combined with SAS-ready innovations in SATA drive technology, SATA/SAS systems are more ready than ever for real-world applications. Simply put, investing in Unified Serial controllers will pay dividends in terms of greater system performance and reliability.

Within this product family, customers can choose from a wide range of port capacities to meet their needs. The Adaptec RAID 5405 offers four internal ports and the Adaptec RAID 5805 offers eight ports, both in an MD2 low-profile form factor. The Adaptec RAID 5085 provides the same MD2 low-profile form factor, with 8 ports for external connectivity. The Adaptec RAID 51245, 51645 and 52245 extend capacity to up to 28 ports, in a half-height format.

The entire line of Adaptec Unified Serial controllers allows customers and System Integrators to take advantage of the

## adaptec

Adaptec, Inc.  
691 South Milpitas Boulevard  
Milpitas, California 95035  
Tel: (408) 945-8600  
Fax: (408) 262-2533

### Literature Requests:

US and Canada: 1 (800) 442-7274 or (408) 957-7274  
World Wide Web: <http://www.adaptec.com>  
Pre-Sales Support: US and Canada: 1 (800) 442-7274 or (408) 957-7274  
Pre-Sales Support: Europe: Tel: (44) 1276-854528 or Fax: (44) 1276-854505

Copyright 2008 Adaptec, Inc. All rights reserved. Adaptec, the Adaptec logo, Snap Appliance, the Snap Appliance logo, Snap Server, Snap Disk, GuardianOS, SnapOS, and Snap Server Storage Manager are trademarks of Adaptec, Inc., which may be registered in some jurisdictions. Microsoft and Windows are registered trademarks of Microsoft Corporation, used under license. All other trademarks used are owned by their respective owners.

Information supplied by Adaptec, Inc., is believed to be accurate and reliable at the time of printing, but Adaptec, Inc., assumes no responsibility for any errors that may appear in this document. Adaptec, Inc., reserves the right, without notice, to make changes in product design or specifications. Information is subject to change without notice.