



In an increasing number of core industries, 3ware high-performance Serial ATA (SATA) RAID controllers provide the speed, capacity and reliability to capture, store and display content economically on any scale. A 3ware-enabled strategy provides safe, nonvolatile, highly scalable storage utilizing high-capacity RAID 5 SATA disks. Off-the-shelf SATA-based disks create enormous savings compared to equivalent SCSI storage. The fast access of disk-based storage allows, not just data restoration, but full business continuity after an IT disruption, and does so at a price point that is cost-competitive with older, slower, less flexible archival tape storage approaches.

## Content on Demand Requires High Performance, Availability, Reliability, Flexibility and Cost-Effectiveness

*The efficiency and flexibility of digital storage and content delivery have made content-on-demand (COD) an attractive concept for some time, but the required storage performance, capacity and bandwidth, and the high cost of new or upgraded technology, made widespread adoption impractical and costly until recently. Cost-efficient Serial ATA drive systems enabled by 3ware RAID controllers, combined with high-bandwidth delivery systems, are now changing the COD landscape as digital approaches find new applications in core industries across the board.*

*Whether storing and serving terabytes of data, video, images and multimedia, or massive databases, SATA has emerged as the ideal solution for a majority of COD-based applications in a variety of diverse markets.*

### Market Background

Much of today's digital video and other content delivery was developed for the entertainment industry, but digital approaches have now spread beyond entertainment into most other key industries. Lessons learned and technology developed for entertainment industry applications are being applied anywhere a requirement exists for rapid, reliable on-demand delivery of data.

Systems such as one-to-many cable infrastructures and hospitality industry video-on-demand services still exemplify content-on-demand, since they require the utmost in storage capacity and access performance. Video and image distribution systems often need fast, on-demand access to archives that may be needed only a few times in months or years. Sports networks and teams require increasingly sophisticated real-time access to the recorded action in order to perform real-time, on-the-fly analyses.

Similarly, public safety and security monitoring services in crowded public places require immediate access and playback capabilities when an event demands intercession. High-capacity digital data, image storage and delivery have become essential to such core industries as insurance, finance, design and manufacturing, law enforcement and medicine. Huge on-demand databases have become essential to efficient production of goods and services in and out of government, and in virtually every field of commerce.

### Market Challenges

The need for entirely new, stable protocols and delivery systems for video, digital images, and other high-density content-on-demand systems has driven amazing advances in the past decade. One minute of uncompressed broadcast-quality video requires a full Gigabyte (GB) of storage, while a collection of medium- to full-length feature films easily consumes multiple Terabytes (TB). Business and government entities have amassed huge quantities of data, to which they often need fast, reliable access.

Storing and delivering such dense data streams, even with newer, more efficient compression algorithms, depends on reliability, high read and write speeds, scalability and tremendous capacities. To deliver it on demand to multiple users simultaneously, without distorting the data or even dropping video frames during playback, takes astonishing levels of performance that are only now becoming available.

### SATA Storage: Essential to the Solution

3ware SATA controllers turn inexpensive SATA drives into fast, affordable data repositories, no matter how great the needed capacity. A SATA strategy is especially cost-efficient for huge bodies of data that would be prohibitively expensive to store and access using older SCSI or new Fibre Channel technology.

A single 3ware SATA controller can manage 12 fast 400 GB ATA drives, or 3 TB on a single controller. By dramatically lowering the cost/performance ratio, AMCC-based systems make it possible to deploy huge content servers for very attractive prices.



## Representative SATA Storage Applications

As word spreads of the capabilities and cost-effectiveness of systems with 3ware high-performance SATA controllers, the range of their application constantly grows. A sample of SATA-based storage in COD applications now in use includes:

- **Video and Multimedia:**

The density of digital video and other multimedia data demand huge capacity, fast reads and high storage reliability for reliable on-demand delivery. SATA technology is the ideal solution.

- **Video Libraries:**

Sometimes called "video graveyards," video libraries store vast numbers of clips and images for use as stock shots. Users may only demand a given clip once in five years but when it is needed, fast delivery is essential. The low cost, reliable storage and fast reads and writes of SATA-enabled storage are increasingly important.

- **Hospitality Industry:**

Hotels often create revenue streams with movies and other entertainment delivered to order. Delivery requires not only high capacity but high read performance because each video server typically delivers to about 200 rooms, in a classic one-to-many challenge ideally suited for a SATA-based solution.

- **Cable Industry:**

Cable, another one-to-many data delivery industry, is evolving in many areas toward on-demand video service. The delivery needs of a medium cable system can dwarf those of the largest hotels and rely on the scalability of fast SATA storage.

- **Near-Line Storage:**

This term covers the classic on-demand industry database. To stay competitive, enterprise users require fast, reliable access for accounting, design and other purposes. AMCC 3ware-enabled storage provides both speed and reliability.

- **Medicine:**

The capability to store and manage huge databases has transformed medicine. A large hospital may see thousands of patients a day, all with detailed medical histories to access quickly on demand. A single MRI can consume 100 GB and labs may conduct 10 or more such tests a day while providing fast, sometimes real-time access. Remote diagnosis and training require utter reliability.

- **Insurance:**

Insurance databases can quickly grow to many TB in size, including both standard data and images of scanned forms. When needed, these records are essential to provision of services. SATA storage not only meets the performance requirements, it scales effortlessly as a database grows.

- **Government, Law Enforcement and Security:**

Fast, reliable access to huge amounts of data is essential to efficient law enforcement in today's highly mobile society. SATA-based storage provides the best solution available without breaking limited budgets.

## Powered by AMCC:

### Why 3ware Controllers Make the Difference

AMCC-supported storage handles huge amounts of data and its RAID-5 technology minimizes the risk of data loss. Fast ATA disk reads keep multiple-TB databases available no matter how fast they may scale.

Cost is an important factor in leading-edge systems. The overall savings per storage node of AMCC RAID-5 content and data storage and access provides a significant competitive edge to VARs bidding on high-capacity data systems.

3ware SATA RAID controllers are ideal for on-demand or high-density data access. A 12-port 3ware card delivers very high port count for multi-terabyte storage, making massive data storage and access fast and cost-efficient.

3ware's innovative StorSwitch™ architecture applies network packet switching technology to large-scale data storage. The non-blocking switched fabric solution scales flawlessly, using a point-to-point topology to eliminate bus sharing and deliver 1.5 Gb/sec to each hard drive in the array. An onboard processor offloads the drain on central CPU capacity and onboard battery backup protects important data from power failures, even those suddenly and intentionally induced. The solution delivers the performance and reliability customers expect from enterprise solutions, with the added benefit of affordable Serial ATA storage.

3ware SATA RAID controllers support more than 3 TB of low-latency storage per controller. An onboard processor minimizes drain on CPU memory while an on-board battery backup protects against power failures, delivering true hardware RAID performance and making systems extremely scalable.

### The Bottom Line

3ware enabled systems are optimum for applications that require sustained high levels of reads and writes with high availability and expanded, quickly accessible storage. Off-the-shelf access technology provides high security for distributed data environments.

3ware is the only SATA RAID supplier with a reliable and effective approach to high-capacity, high-performance, value-priced RAID data storage with highly scalable content delivery solutions.

# AMCC

#### Sales Offices for 3ware Products:

USA: +1-877-883-9273  
+1-408-523-1000  
Europe: +00-800-3927-3000  
Asia/Pacific: +65-6826-3381  
Japan: +81-3-5532-7234

[3waresales@amcc.com](mailto:3waresales@amcc.com)  
[www.3ware.com](http://www.3ware.com)  
[www.amcc.com](http://www.amcc.com)

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