

A.T. WORKS Meets Customer Performance Demands with Adaptec maxCache™ SSD Cache Performance Solution



Introduction

Founded in 1994, A.T. WORKS, Inc. manufactures and sells servers and other IT products, and also provides Internet services and technical support. Through its at+link hosting services, the company manages the largest server farm in Japan with 9,000 specialized servers that feature Adaptec by PMC Series 5 and Series 2 Unified Serial® storage controllers.

Searching for a low-cost, high-performance storage solution

A.T. WORKS has traditionally offered specialized servers with SAS hard disk drives (HDDs) to customers who demand higher performance than SATA HDD-based servers provide. But the actual improvement of performance did not justify the increased cost for SAS-based servers (the costs of using SAS disk drives are up to three times as much as compared to using SATA disk drives). The cost difference has been a major stumbling block for many customers.

With the emergence of solid state drives (SSDs) as a viable storage option — and the performance promise they deliver — A.T. WORKS was pressed to find an affordable solution for its most performance-hungry customers.

“We get a lot of requests for SSD solutions from our customers,” says Takuji Ikeda of the A.T. WORKS engineering division.

“We have been looking for quite awhile for a cost-effective way to add SSD components to our servers, but SSD capacity is less than that of an HDD and the relative cost per gigabyte is much higher, so there is no direct substitute for HDDs at this time.”

Adaptec maxCache™

Recently, A.T. WORKS received an Adaptec maxCache™ SSD Cache Performance Solution kit from Adaptec.

Adaptec maxCache combines customized Intel® SSD cache with Adaptec maxCache SSD Caching Software to create high-performance hybrid arrays of SSDs and hard disk drives (HDDs) that perform up to five times faster than HDD-only arrays, with up to 50% savings in costs.

Executive Summary

Challenge

A.T. WORKS, Inc. was searching for an affordable solid state disk-based web and database server solution for customers who were dissatisfied with the performance offered by SATA- or SAS-based hard disk drive arrays.

Solution

Adaptec maxCache™ SSD Cache Performance Solution

Results

Significant performance increases for web applications when compared to SATA RAID 1 configurations and SAS-only arrays

“With Adaptec maxCache, we can meet the demands of customers who need a low-cost, large capacity, high-performance storage solution.”

Takuji Ikeda
Engineering Division, A.T. WORKS, Inc.

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Adaptec maxCache SSD Caching software introduces a patent-pending Learned-Path algorithm that alleviates the bottleneck that can occur between server processors and hard drives by copying frequently-read data directly into an optimized SSD cache pool for faster retrieval in future requests.

A.T. WORKS immediately began testing it on the Web servers and database servers that are the most popular with their customers, and was pleased with the results.

“Thanks to the assistance provided by Adaptec Japan during every stage of development — from testing all the way through implementation – we were able to smoothly perform a compatibility test on our new 2.5” x 4 bay server.

“Our testing confirmed that maxCache doubled the performance of our SATA HDD RAID 1 configurations with static web pages and significantly outperformed SAS HDD-only configurations with dynamic web pages.”

Trouble-free maintenance

Adaptec Storage Manager™ provides an intuitive, centralized interface to enable, disable, and configure maxCache SSD cache levels. Since the cache is independent of the logic array, the cache size can easily be adjusted by adding up to four SSDs per controller, and SSD cache devices can be removed or fail anytime without affecting data integrity or disrupting operations.

“This is a great benefit for companies like us who are in the business of providing uninterrupted services to customers.”

Upgrading customers to maxCache

The Adaptec maxCache solution is ideal for data centers running applications with high “read” operations such as web serving, file serving, and databases.

“maxCache allows us to produce an infrastructure that can easily be adapted to meet our customers’ needs for storage solutions that feature large capacity, high performance, and low cost. We now regularly approach existing customers who are already using our servers with Adaptec Series 5 and Series 2 storage controllers and propose an upgrade to maxCache. Response has been very positive.

“A.T. WORKS is committed to being the leading provider of IT solutions and web hosting services in Japan. We use maxCache and Adaptec storage controllers in our server farm and highly recommend them to our customers for their own applications as well.”

A.T. WORKS, Inc Company Profile

- Founded in April 1994
- Manufactures managed servers and various IT products for data centers
- Website: www.atworks.co.jp

Adaptec Products

- maxCache SSD Cache Performance Solution
- Adaptec Unified Serial® Storage Controllers:
 - Adaptec 2405 (Internal 4 port PCIe)
 - Adaptec 5405 (Internal 4 port PCIe)



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