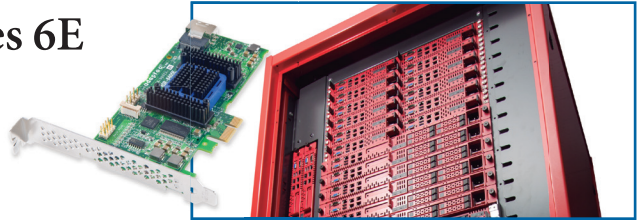


# A.T.WORKS, Inc. builds Adaptec Series 6E SATA/SAS RAID adapters into their newest super space- and power-saving server to offer 6Gb/s Hardware RAID



## Introduction

Founded in 1994, A.T.WORKS, Inc. sells server systems with PC-UNIX (Linux, Free BSD, etc.) pre-installed. It also develops, manufactures, and sells a variety of server systems, including rack-mounted servers. In 1996, the company partnered with Link Corporation to provide the “at + link” dedicated server service. Since then, A.T.WORKS has been recognized as a concept leader and a price leader in dedicated server service, and has been growing each year. The company manages more than 10,000 servers and also provides value-add to its hardware products by offering private cloud solutions and the development of appliance products, including firewall, load balancing, and spam filters based on open source software.

A.T.WORKS, Inc. has been employing 3Gb/s Adaptec Series 5 and Series 2 SATA/SAS RAID adapters for their various server systems. The company has also recently implemented 6Gb/s Adaptec Series 6E SAS/SATA RAID adapters.

Mr. Yoshiteru Takase, Sales Division Director and Manager of Product Sales, and Mr. Yasuyuki Ibaraki, Product Sales, spoke to us about their decision to adopt the Adaptec RAID 6405E adapters into A.T.WORKS, Inc.’s 1/4U-sized space- and power-saving Quad Beagle ZG+ server.

## Customers demand hardware RAID in a 1/4U-sized space-saving form factor

The Quad Beagle Series offers a unique features set within the 1/4U super space-saving form factor which the competition doesn’t offer, such as multiple LAN ports, IPMI management, and high-performance Intel processors. This allows A.T.WORKS, Inc. to differentiate itself from the competition in both performance and features, and to build demand from data centers and appliance users who need server density, redundancy and power savings.

The Quad Beagle ZG+ is the latest model in A.T. WORKS’ third-generation Quad Beagle Series, and incorporates the company’s Mini-ITX Server motherboard. The system supports Intel Core™ i7/i5 processors with advanced multi-core technology, and provides

high-performance processing and power savings. The system also equips IPMI as a standard feature set and four Gigabit Ethernet ports, which has been increased from three in previous generations to offer redundancy. Maximum memory size has been expanded from 8GB in previous models to 16GB. But the biggest difference between this model and previous generations is the ability to accommodate a RAID adapter.

“Hardware RAID support on the Quad Beagle Series is a top priority for our customers, but incorporating a RAID adapter into the chassis has not been possible in the past due to the tight physical dimensions of the 1/4U form factor,” said Mr. Takase. “It was a challenge to fine tune the internal mechanical design of the ZG+, but we were ultimately able to install a RAID adapter, plus improve the cooling air flow inside the chassis.”

*“With the adoption of the Adaptec 6405E RAID adapter, we can meet the demands of customers who need high-performance hardware RAID with 6Gb/s SSDs in our 1/4U-sized super space-saving rack mount server.”*

— Mr.Yoshiteru Takahasi, Sales Division Director and Manager of Product Sales, Sales Division A.T.WORKS, Inc.

## Executive Summary

### Challenge

A.T. WORKS, Inc. was searching for a 6Gb/s hardware RAID adapter to fit into its super space- and power-saving Quad Beagle ZG+ server.

### Solution

A.T. WORKS, chose the 6Gb/s Adaptec RAID 6405E SAS/SATA RAID adapter with a smaller than MD2 form factor.

### Results

Hardware RAID with 6Gb/s SSD performance, plus easier cable routing and better airflow inside the chassis.



## A.T.WORKS, Inc. builds Adaptec Series 6E SATA/SAS RAID adapters into their newest super space- and power-saving server to offer 6Gb/s Hardware RAID

### Adaptec 6405E allows support for 6Gb/s SSD RAID

Demand for SSDs in servers is increasing among Quad Beagle Series customers who prefer 6Gb/s I/O performance since the SSD market has been transitioning to 6Gb/s from 3Gb/s. Onboard SATA offers 6Gb/s connectivity but doesn't offer RAID. The ZG+ server can physically accommodate Adaptec Series 2 or Series 5 RAID adapters but performance is limited to 3Gb/s, so A.T. WORKS decided to offer full 6Gb/s performance by upgrading to the Adaptec 6405E RAID adapter.

"With its smaller than MD2 form factor, the 6405E adapter does not take up much space inside of the ZG+ chassis," said Mr. Takase. "Cabling to devices from the adapter is much easier due to less stress in the cables, and airflow is greatly improved compared to adapters with a standard low-profile MD2 form factor. I have heard that Adaptec by PMC developed the small form factor of the 6405E after receiving our feedback about the space limitations in past Quad Beagle Series servers. When I first saw the 6405E installed in a ZG+ server, I immediately realized that the Adaptec 6405E is the best-fitting RAID adapter for super space-saving servers like ours."

Additionally, the support provided by Adaptec RAID adapters for a variety of Open Source OSes such as Debian and FreeBSD has been very favorably accepted by A.T. WORKS' customers, many of whom have ISP and Hosting customers who use open source OSes.

### Responsive PMC technical support is key

The A.T. Works Product Sales team is in front of customers on a daily basis, so user support is a

primary concern when the company chooses its component vendors.

"Based on our experience, no two RAID-related errors are the same," said Mr. Ibaraki. "The log files available through Adaptec Storage Manager allow us to remotely analyze the user's system so we can provide quick and accurate support without having to go on-site. Even with our wide range of RAID experience, we still occasionally require PMC's engineering support. In those cases, we have been very satisfied with the support level and response time provided by PMC Japan."

"at+link has been running our Quad Beagle ZG+ with the Adaptec 6405E RAID adapter in dedicated server service trouble-free for more than six months," said Mr. Ibaraki. "This proven track record has encouraged us to start offering a build-to-order ZG+ server with the 6405E RAID adapter for any customer who wants a 6GB/s storage solution. We already offer the 6405E as a 6Gb/s RAID option for other servers, such as our 1/2U-sized radserv® and our 1/2W-sized Stingray."

### Related information

- **Adaptec RAID 6405E product page:**  
<http://www.adaptec.com/en-us/products/series/6e/>
- **Adaptec RAID 6405E Data sheet:**  
[http://www.adaptec.com/nr/pdfs/ds\\_series\\_6e.pdf](http://www.adaptec.com/nr/pdfs/ds_series_6e.pdf)
- **Adaptec RAID 6405E Technology Brief:**  
[http://www.adaptec.com/nr/pdfs/series\\_6e\\_tb.pdf](http://www.adaptec.com/nr/pdfs/series_6e_tb.pdf)
- **Adaptec RAID 6405E Compatibility Report:**  
[http://download.adaptec.com/pdfs/compatibility\\_report/arc-sas\\_cr\\_03-27-12\\_series6e.pdf](http://download.adaptec.com/pdfs/compatibility_report/arc-sas_cr_03-27-12_series6e.pdf)

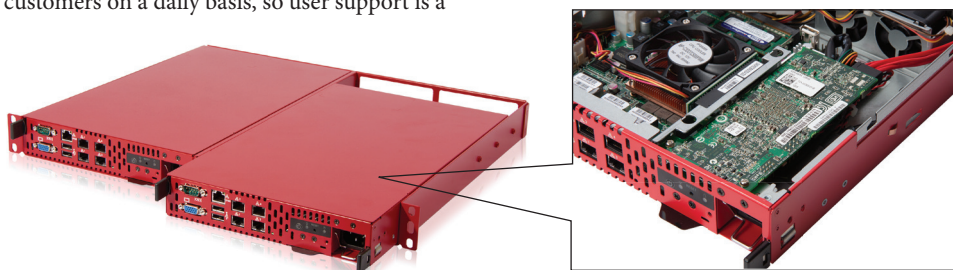
### About the customer

#### A.T.WORKS, Inc. Company Profile

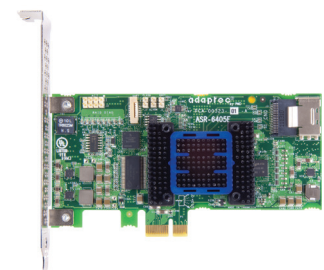
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Website:

<http://www.atworks.co.jp/>



Quad Beagle ZG+ with Adaptec 6405E RAID adapter (Dual configuration with rackmount kit)



Adaptec RAID 6405E: 2.535" H x 5.115" L  
(64mm x 130mm)

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by PMC

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