



“The Hitachi Adaptable Modular Storage 2000 family storage systems provide a clear price-performance advantage. In fact, in our product testing, we found that the system performance of the AMS 2000 family is 20% to 30% higher than its rival. That’s why we decided to also replace some of our Fujitsu storage products in this project.”

*Mr. Shuping Zhu
President
Wasu Group*

Hangzhou Wasu Group

INDUSTRY Publishing and Media

SOLUTIONS **Storage Management, Modular Platform**
Hardware — Hitachi Adaptable Modular Storage 2300 and 2100
Software — Hitachi Dynamic Provisioning

Hitachi Midrange Storage Supports Dynamic Applications for China's Online Media Industry

Hangzhou Wasu Group uses its storage systems principally as a video repository and archive. With the business experiencing rapid growth and a fast-growing number of users, the company needed to enhance the serviceability, performance and capacity of its storage infrastructure to meet this exponential demand. To answer that challenge, Wasu chose Hitachi Adaptable Modular Storage.

About Wasu Group

With thousands of employees in China, Wasu Group operates a diversified business comprising a number of subsidiary companies, such as Wasu Online, Wasu Digital TV and Wasu Broadband. Each of these companies operates with a different business focus, ranging from video-on-demand to digital TV, broadband Internet access and hosting services. Wasu Online and Wasu Digital TV are both well-established online content providers with significant online traffic that runs into petabytes.

Hangzhou Wasu Group is the leader in Hangzhou Internet access and hosting services. Wasu is dedicated to developing digital TV with the ultimate goal of implementing digital TV across the whole province and transforming the company into an integrated corporation with diverse

operations covering wireless TV, mobile TV and digital applications.

In the process of promoting the development of digital cable TV, Wasu has created a new model for digital TV: it invented Chinahosting services. Wasu's dedication to new communications, new media and new applications heralds a new era of digitalization.

The company has also created integrated advantages that combine innovation in technology, applications and business. This is now recognized within the industry as the "Hangzhou model" and has accelerated the transformation of Hangzhou in digital cable TV operations. As early as 2006, Wasu had over one million users, creating a wide range of social and economic benefits for Zhejiang Province.

Key Threats to the Media Industry: System Overload and Unplanned Downtime

The biggest IT challenge facing the media industry is the overwhelming workload generated by the explosive growth of streaming data. For example, during a "hot spot," such as the phenomenon surrounding the movie *Avatar*, the hit rate can climb dramatically in a very short period of time. Sustained high demand for streaming data puts intense pressure on both the server and I/O operation. In the absence of effective storage provisioning, the streaming quality begins to deteriorate, sometimes so seriously that the entire system can crash. As online TV and video broadcasting are two of the main businesses at Wasu, it was critical for the company to address this issue.

Dynamic Storage Needs

Wasu provides free online movie and TV broadcasting, which is why the efficiency of its bandwidth throughput is mission critical to ensure high levels of service quality. Indeed, at any given moment, Wasu is serving some 10,000 concurrent broadband users. To deliver such a large volume of high bandwidth data, the company must address two key issues: stability and performance.



"With AMS 2000 systems and Dynamic Provisioning software, we have established a widespread storage pool. This unique feature optimizes our data provisioning with an evenly distributed workload. As a result, the problems of I/O bottlenecks and overloading are solved, and we also enjoy improved performance, higher quality and a better user experience."

*Mr. Shuping Zhu
President
Wasu Group*

Storage Products with High Compatibility

Aware that it would have to migrate its old system to all-new storage products to sustain business momentum, Wasu began a comprehensive process of evaluation to choose the right solution. It was vital, for instance, that the selected solution could pass a rigorous testing process in such areas as performance, compatibility and availability. After a comprehensive search, Wasu found that the midrange Hitachi Adaptable Modular Storage 2000 family provided the best results for a number of its applications. Two Adaptable Modular Storage 2300 systems are used for storing the company's video database, while another AMS 2300 and AMS 2100 are used for operating the OA system. In addition, two further AMS 2100 systems provide hosting services and research and development.

A Midrange Storage Product for Enterprise-class Storage Needs

To meet the unique needs of the online media industry, the Adaptable Modular Storage 2000 family provides cache partitioning technology, which enables Wasu to flexibly allocate resources according to its specific video broadcasting needs. This advanced functionality provides high adaptability and usability for a wide range of applications, and it optimizes the system's performance. The Adaptable Modular Storage 2000 family systems are also developed based on SAS disk array technology, which offers two important business advantages:

- Delivers massive bandwidth to the disks that support Wasu's video-on-demand business
- Significantly increases I/O performance, both in real-life scenarios and in related testing

Moreover, the modular Adaptable Modular Storage 2000 family provides unsurpassed scalability and flexibility for system expansion. A system upgrade can be completed in just a few hours, making it a hassle-free solution for fast-growing businesses such as Wasu.

Solving System Overloads with Dynamic Provisioning

The Adaptable Modular Storage 2000 family systems provide a dynamic provisioning function through Hitachi Dynamic Provisioning software, which allows all RAID groups to be placed in a single pool. All video data is then stored evenly in the pool, eliminating uneven workloads at the disk level and solving the "hot spot" problem. Dynamic Provisioning software also lets administrators quickly allocate the right amount of virtual storage to application in the pool as needed, without allocating all real storage, which significantly reduces administrative and management costs.

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