Wuxi China Resources Semico Co., Ltd.

**INDUSTRY**
Manufacturing

**SOLUTION**
File and Content, Enterprise Platform

**Hardware** — Hitachi Universal Storage Platform® VM, Hitachi NAS Platform 3090, powered by BlueArc®

**Software** — Hitachi Base Operating System, Hitachi Dynamic Link Manager, Hitachi NAS Platform system software, powered by BlueArc (value bundle)

“Hitachi Universal Storage Platform VM enterprise storage and the high-performance NAS solution helped us accelerate time to market, reduced management cost and enabled us to take the leading position in the market competition.”

Wang Jinhuai
Manager, Information Department
Wuxi China Resources Semico Co., Ltd.
Hitachi Data Systems Helps Wuxi China Resources Semico Build a Unified Storage Platform

With fast growth in demand for consumer integrated circuits in both the domestic and oversea markets, Wuxi China Resources Semico Co., Ltd., (Semico) is facing a keen competition from competitive companies. The success of the business depends on fast time to market, and a high-performance computing platform is the foundation of integrated circuit design. Semico selected a Hitachi Data Systems solution, including Hitachi NAS Platform and Hitachi Universal Storage Platform® VM, to provide the high-performance, highly reliable and scalable unified storage platform it required.

About Semico

China’s key national hi-tech enterprise, Semico specializes in the design and development of consumer integrated circuit and system on chip (SoC). Over 400 high-quality integrated circuit products developed and produced by Semico are widely used in many areas, including communication, audio/video, green lighting, automobile, mechatronics, metering and timing, teaching instruments, information appliance, etc. With a customer base both in China and overseas, Semico’s revenue exceeds RMB 100 million for 5 consecutive years, maintaining a stable growth rate of over 30%.

IT Issues

Semico’s high-performance computing applications are relatively mature. Before the project implementation, the hardware architecture of IT system was complex, with many host platforms in the data center, including Sun, IBM, HP, Lenovo and others.

The company’s high-performance computing platform was mainly deployed on a Sun and UNIX server platform and storage. Due to its low-end modular storage, the platform’s performance and capacity could no longer meet requirements; the computing speed was affected seriously. In the case of equipment failure, the application would need to perform the computing again, which would delay the product design cycle and increase the cost (because the license of high-performance computing application software was paid on daily basis).

Project Objective

Semico sought a high-performance computing platform storage space for each business unit to share access via a unified mount point (also known as cluster namespace), which is a core component of the hardware platform in the project. Specifically, the company wanted the solution to meet the following requirements:

- After going live, the storage system would face the concurrent access requests of multiple business units, as well as ever-increasing business content. Users could not endure any performance bottlenecks, so the solution would need to provide high performance and high scalability in a high throughput and massive data environment. Concurrent processing capability for large files and a large number of small files would be essential.
- The storage system would need to meet the application demand in the coming 3 years. With the growth of data in the future, the storage device

“Among various solutions, Hitachi NAS Platform addressed our issues of concurrent access of a large number of files, while maintaining high performance, which could not be provided by other vendors. In addition, the outstanding performance, reliability and scalability of Hitachi NAS Platform and USP VM provided superior cost-effectiveness. This solution is the only choice for our high-performance computing, and even the cloud computing platform in the future."

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Manager, Information Department
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would be tasked to provide seamless scalability in terms of capacity and processing.

The data availability requirement at Semico is high, so the storage would need to provide high availability. The solution would need to ensure that if the disk and RAID were to fail, the business would not be interrupted, and the data would not be lost.

The solution built in this project would be accessed by internal business units. In the future, a cloud computing platform would be built upon it to provide service for external companies, while creating a hybrid cloud service consisting of private cloud and public cloud.

The Hitachi Data Systems Data Storage Solution

HDS provided a customized unified storage platform solution for Semico (see Figure 1). The solution provided a high-performance, highly reliable and scalable integrated storage platform based on Hitachi NAS Platform (HNAS) 3090, powered by BlueArc®, and Hitachi Universal Storage Platform® VM (USP VM).

The solution set USP VM as the core of the SAN storage architecture to meet high-performance storage requirements for structured data. The USP VM combined with SAN applications and HNAS gateway to provide a foundation platform.

The solution added more HNAS 3090 gateways to implement high-performance network data sharing applications. USP VM and its virtualized storage provided the storage space required for the file sharing.

Benefits of HDS Solution to Semico

The Hitachi Data Systems solution provided tremendous improvements in performance, management and uptime:

- HNAS 3090 runs in parallel computing and processing modes. A single node can provide the throughput bandwidth of up to 1100MB/sec, and a pair of clustered nodes can provide the IOPS
processing capability of up to 200,000 IOPS, which is especially ideal for concurrent processing of massive small files. After implementing HNAS 3090, Semico improved the system performance by 6 times, reduced the design cycle and accelerated time to market.

■ The cluster namespace of HNAS 3090 consolidated multiple file systems, simplified the management with unified mount point and enabled load balancing among nodes to avoid hot-spot nodes and maximize the system performance.

■ Combined with the front-end HNAS, USP VM supports 1,200,000 IOPS, enabling end-to-end high performance without any bottleneck. This means storage performance was increased by 700%. In addition, USP VM provides a 100% reliability guarantee, avoids unplanned downtime caused by the storage device, and ensures high-performance computing runs continuously.

■ HNAS 3090 and USP VM offered high scalability and virtualization features, laying foundation for next phase of the cloud computing platform project.

Profound Influence in the Industry
Semico is a leading hi-tech company. Its high-performance computing platform helps the company accelerate time to market of new products, and enhance competitive edge. As an industry leader, Semico’s success story will act as an example of demonstration, driving HDS to win in other high-performance computing projects.

Semico Looks Toward Future System Build-out with Hitachi Data Systems
In subsequent phases, Semico will expand the capacity of the storage and HNAS, and build a cloud computing platform with USP VM and HNAS virtualization technology.

Hitachi Storage Services Manager and Hitachi Tuning Manager software will be introduced to further increase manageability, reduce the operating and capital expenditure (OPEX and CAPEX) and meet the service level requirements. The software will also improve the correlation between the business and IT, optimize availability and performance, and enhance the data security.

In this project, HDS has helped Semico build a high-performance and highly scalable data management platform, which can provide more efficient and stable support for future business. In subsequent operations and maintenance, HDS will assist Semico in storage resource management and cloud deployment to achieve higher business objectives.