

## CASE STUDY

Intel® Modular Server

Intel® Xeon® Processor 5500 Series

Enterprise Server

Performance: Data Intensive Computing



# Integrated Office Automation Platforms Improve the Efficiency of Railway Bureaus

Intel® Modular Server products enable Shanghai and Jinan Railway Bureaus achieve simplified and flexible integration of office automation platforms



“By integrating computing, storage and network functions in a single system, Intel® Modular Server products not only realize high performance/price ratios, but also reduce the infrastructure complexity of our office automation platform, making it quick and easy to manage and maintain the system.”

Fangcheng Li  
Deputy Director of Informational  
Shanghai Railway Bureau

## CHALLENGES

- **Enhance computing performance** of Shanghai and Jinan Railway Bureaus' office automation system infrastructure
- **Improve system stability** of computing infrastructure for 24/7 server operations
- **Reduce costs** of maintenance and system management

## SOLUTION

- **Deploy Intel® Modular Server** products based on the Intel® Xeon® processor 5500 series<sup>1</sup>

## IMPACT

- **Enable flexibility** in deployment and scalability to meet business needs as demand grows
- **Boost performance versus price** ratio, through reduction in number of physical servers and space while increasing performance
- **Reduced maintenance costs** through remote management features of new platform which reduced number of on-site technical support visits

## Introduction

Vast networks with long railroads and large numbers of railway stations and control points, harsh out-door environment, and decentralized regional management—these are the norms of the railway industry. These inevitably complicate the routine management and maintenance of the railway office's automation platforms. The increasing functional requirements of the fast-growing railway industry constantly demand higher performance, easier operation and maintenance of the computer platforms. This compelled Shanghai and Jinan Railway Bureaus to find a low cost and highly flexible IT infrastructure architecture that can meet the challenges of their ever-increasing business demands.

## Intel® Modular Server products are trustworthy

The office automation system is equally important as the railway business operations system for a modern railway enterprise. The railway business operations system feeds information to the office automation system, while the office automation system provides the analysis and decision making to the railway operations system. Both systems are essential to Shanghai and Jinan Railway Bureaus. Over the last decade, the rapid growth of the railway industry in China has resulted in the need for better performance office automation systems. At the same time, management and maintenance of these systems were becoming more complex. Shanghai and Jinan Bureaus of Railways needed new computational platforms to meet these performance requirements, while reducing the complexity and cost of system management and maintenance. equipment leads to higher procurement costs and increased equipment management issues. The solution lay in virtualization technology.



## Intel® Modular Server products meet Shanghai and Jinan Railway Bureaus' criteria for performance versus price ratio, deployment flexibility, and remote management capability

Shanghai and Jinan Railway Bureaus always keep an eye on industry-leading technologies to improve their IT environments. They performed stress tests on the Intel® Modular Server products with the help of the Joint Innovation Lab of the Ministry of Railways (MOR) which was co-founded with Intel. Intel Modular Server products are based on the Intel Xeon processor 5500 series, which optimized the data bandwidth between processors and the memory. The performance of database operations at Shanghai and Jinan Railway Bureaus significantly improved compared to their existing systems. Stress tests have confirmed that Intel Modular Server products were fully capable of meeting the server performance requirements of the Railway Bureaus' office automation systems. Moreover, the stability of the servers and fail-over capability of the system architecture was well understood and built into the total solution of office automation thanks to the long term collaboration between Intel and the Railway Bureaus.

### Providing a flexible and simplified IT infrastructure

Intel Modular Server products integrate a series of management and storage modules that simplify operations, lower deployment and management costs, and enhance flexibility. It combines blade computing, storage, and network exchange modules into a single system. This reduces the complexity of building enterprise IT infrastructure as well as the need for technical expertise to manage and maintain the Bureaus' IT environment. "In

the past, we had to configure two physical servers to backup each other every time we implemented a new application, making the job quite complicated. By contrast, since Intel® Modular Server products can run up to six computing modules simultaneously, each featuring two multi-core Intel® Xeon® 5000 processor series and 32 GB of memory, we can now implement multiple office automation applications in these modules, reducing the number of physical servers needed," said Xinwen Yuan, Chief Engineer of IT Division of Jinan Railway Bureau.

### Remote management capability

Intel Modular Server products are not only easy to deploy and integrate seamlessly with existing office automation platforms of the Railway Bureaus, but also present high performance/price ratio. The unique remote management module is particularly suited for the Railway Bureaus, which need to manage networks of long railroads and large number of railway stations.

The management module of Intel® Modular Server products provides a Web-based management interface. With remote servers and a network connection, managers and operators can directly monitor the status of each computing or storage module through their Web browsers. Aside from executing operations such as shutdown, restart and storage management, with the help of the redirect function from the KVM switches,

### Spotlight on Shanghai and Jinan Railway Bureaus

- Shanghai Railway Bureau is the only railway bureau whose network covers three provinces and one municipality directly under the Central Government, which are the most developed regions in China and are the focal areas for increased cargo transportation capacity and revenues.
- Jinan Railway Bureau is one of the backbone hubs of China's railways network, and a key channel for coal transportation. It provides crucial support to the economic development of both Shandong Province and the whole country

managers and operators can also view the current status of remote computing modules, and control them using local keyboards and mice—as if they were sitting right in front of the servers. With the help of the CD redirect function, managers and operators can install operating systems or applications on remote computing modules through local CD-ROMs. All these features simplify the implementation and maintenance of the Railway Bureaus' office automation applications. Managers can also connect to the KVM switches, which are independent from each other, on all six servers from the client end. Upon deployment of Intel Modular Server products, the Railway Bureaus' management and maintenance costs is further minimized by reducing the frequency of on-site maintenance.

Find a solution that is right for your organization. Contact your Intel representative or visit the Reference Room at [www.intel.com/references](http://www.intel.com/references).

SOLUTION PROVIDED BY:



<sup>1</sup>64-bit Intel® Xeon® processors with Intel® 64 architecture requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel 64 architecture Processor will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel 64 architecture-enabled OS, BIOS, device drivers and applications may not be available. Check with your vendor for more information. Performance will vary depending on the specific hardware and software you use. See most up to date benchmarks at <http://www.intel.com/products/benchmarks/server/index.htm> for detailed information.

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