

Innovative stress testing program

With Intel® Core™ vPro™ processor-based PCs, COSCO Container Lines Co., Ltd. achieved information system stress testing based on real data



“Intel® Core™ vPro™ processors feature unprecedented remote management, which provides innovative ideas and flexible solutions for the realization of system simulation stress testing based on real data and has a very wide application prospect.”

Wang Xinbo
Director of PCs Center
COSCO Container Lines Co., Ltd.

CHALLENGE

- **Assess whether the business information system performance** can meet system load stress caused by the increasing number of users and business needs.
- **Complete business system pressure testing with real and reliable data** without affecting normal business system operation.
- **Reduce the cost** of business system stress testing.

SOLUTION

- **Utilize the built-in remote management capability of Intel® Core™ i5 vPro™ processor-based PCs** to securely wake and push stress testing scripts to remote PCs during idle time, and automatically run them within the specified time, enabling system stress testing based on real-time data in an actual production environment without affecting production.

IMPACT

- **Ability to use real time data in stress testing**, thus increasing the reliability for information system stress testing.
- **Testing cost** of the stress testing program is better managed, and makes it more convenient, effective and easier to operate.
- **Minimize disruption to the business system** production environment by implementing an innovative system stress testing solution.

Introduction

With the rapid development of the international shipping industry as well as the expected growth in customer and business needs, the global container traffic information integration system at COSCO Container Lines Co., Ltd. (COSCO) was under increasing stress. To avoid potential production risks, it became extremely urgent to conduct stress testing on the business information system to assess if it could bear the load brought to it by the increasing number of users and demands at peak business times.

Intel® Core™ vPro™ processors are trustworthy

COSCO is one of the world's leading providers of integrated container shipping services. Using its global container transport information integration system, COSCO tracks hundreds of container ships and hundreds of thousands of standard shipping containers. While the system enables online cargo tracking, it also handles electronic booking, electronic bills of lading, online inquiry and more.

COSCO had been facing various difficulties in its attempts to stress test its core information system. Firstly, COSCO's global container transport information integration system database and design architecture was very unique, and there were no readily available testing tools. Secondly, the information system was extremely complex and a typical application scenario has thousands of users online simultaneously, operating dozens of different modules. It was not only costly but almost impossible to manually simulate that many users operating simultaneously. Lastly, COSCO's global container transport information integration system was its core production platform, and any interruption to production was not allowed during stress testing.

COSCO has paid close attention to the importance of information technology to its business. Due to its dispersed geographical locations, COSCO deployed Intel® Core™ i5 vPro™ processor-based PCs, and



Innovative stress testing solution took full advantage of the built-in hardware-assisted remote management feature of PCs with Intel® Core™ i5 vPro™ processors, meeting the needs of COSCO with its convenience and efficiency, lower testing cost and high operability.

has established the remote management and maintenance of its IT assets, remote pushing of virus database updates and other functions using its built-in hardware-assisted remote management feature. The technical staff at COSCO thought that since they could already do this, then the stress testing that previously seemed impossible could now be accomplished. They just needed to develop an application that would do the job of stress testing the information business system according to preset operation processes from the remote PCs within specified times. The application would be pushed to the remote PCs with Intel® Core™ i5 vPro™ processors during off hours so that it would not affect production. After much discussion, an innovative stress testing program gradually began to form.

Intel® Core™ vPro™ processors and COSCO's stress testing tool combine together perfectly

The technical staff at COSCO very quickly developed a set of tools to simulate the real operations of business users by capturing screen operations. This tool enables screen capture of users' operating actions on screen, identifying the system return status and pop-up windows, and recording real business operation processes into action scripts that can be played back.

Using the stress testing tool, COSCO can quickly record booking, bills of lading, transit, bulk cargo trade, shipment inquiries, freight and other functions in the shipping business into a case script of stress testing based on different scenarios. These scripts can be invoked by the stress testing tool and executed many times at different frequencies on a PC. Therefore, the real operation of users can be effectively simulated.

With the built-in hardware-assisted remote management capabilities of Intel® Core™ i5 vPro™ processors, technical staff can push scripts to remote PCs, wake up remote PCs, and run the testing tools at during off-hours. This makes Intel® Core™ vPro™ processors and COSCO's stress testing tool a perfect combination.

Remote management feature

System stress testing with Intel® Core™ i5 vPro™ processor-based PCs during off-hours was a new attempt. With the built-in, hardware-assisted remote management features of Intel® Core™ i5 vPro™ processors, PCs could be remotely powered on even when PCs were turned off by employees, as long as they were connected to the network. In this way, COSCO woke up idle remote PCs and pushed stress testing tools and scenario

Spotlight: COSCO

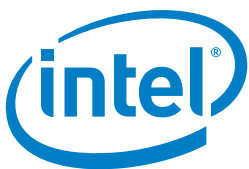
- COSCO is the core enterprise specializing in maritime container transport of China Ocean Shipping Group (COSCO Group), which is ranked 327 in the Fortune 500 companies in the world.
- By August 2010, COSCO had over 150 full container ships with more than 600,000 standard containers. Its container transport business is worldwide and has more than 400 agents and branches.
- COSCO has more than 80,000 employees, over 300 of them information technology engineers.

scripts to these PCs during off-hours, and the stress testing tool was designed to start at a specified time. More than 300 remote Intel® Core™ i5-650 processor-based PCs automatically implemented many types of business operations successfully at the same time, simulating the stress in a production environment. Successful stress simulation testing was achieved as a result.

The innovative system stress testing method does not affect the normal operation of production systems of COSCO and, more importantly, this test program used real business operation data to make the testing results more credible and reliable. As the whole stress testing process required only one stress testing specialist to manage scripts, send documents, record scripts, trigger commands, monitor production system performance, and more operations in other steps, the cost of testing was very low.

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¹PCs with Intel® vPro™ processor technology include Intel® Active Management Technology (Intel® AMT). Intel AMT requires the PCs to have an Intel AMT-enabled chipset, network hardware and software, connection with a power source, and a network connection.