



## Engineers at French Production Company Improve Productivity with New Business Solution

### Fast Facts

#### Customer Profile

Cimes serves clients in manufacturing, where simulation plays a vital role in the various stages of designing and implementing large industrial projects. The company provides digital conceptions of clients' planned production processes.

#### Hardware

- Dual-Core Intel® Xeon® processor 5100 series

#### Software and Services

- Microsoft Server Product Portfolio
  - Windows Compute Cluster Server 2003

Cimes is a digital simulation company that works with organisations where simulation plays a vital role in designing and implementing new projects. The company wanted to increase productivity to compete for—and respond to—the increasing need for computing power in digital simulation for high-tech industries. To do this, Cimes wanted to deploy a blade server-based cluster using a 64-bit multiprocessor system. The most effective solution was found in the deployment of a cluster of blade-based servers with Dual-Core Intel® Xeon® processors running on Windows® Compute Cluster Server 2003.

#### Situation

Cimes provides its clients with digital conceptions, or models, of project production processes before entering the beginning stages of construction. These models help clients map out and understand each production stage to forecast possible errors, detect potential risks, ensure safety, offer risk management solutions, and optimise construction processes. They can be used for a wide range of services, including measuring acoustics, performing crash simulation, testing flammability, and forecasting equipment lifelines.

Serving major players in high-tech industries that require digital simulation, Cimes needed to be better placed to anticipate and accommodate the rapid expansion of computing needs for its customers' success. To accomplish this, the company's team of engineers required a solution that would maximise their productivity and produce quicker responses, with short installation times and trouble-free long-term management.

The potential solution would ultimately position the company to cope with the growing size of finished models for its customers, reducing processing time, successfully meeting deadlines, saving the company operational costs, and generating customer satisfaction.

Arcangelo Schena, Commercial Director, Cimes, says: "Whether it's in rail, automobile, or civil engineering sectors, the rapid development in technology and safety regulations translates into heavier and increasingly complex models."

#### Solution

After much investigation into several potential solutions, including Linux, Windows, and hardware combinations, Cimes decided to invest in computing processing power. Arcangelo says: "In today's competitive market, we must meet the growing need for increased computing power."

The company wanted to deploy a blade server-based cluster using a 64-bit multiprocessor system. So, at the beginning of 2007, it invested in a new computer system based on Dual-Core Intel® Xeon® processors and an Ethernet gigabit interconnection network. This was a strategic project, but didn't satisfy all of the company's business needs. After a few comparative tests had been carried out, with help from Microsoft® Partner Infogest, Cimes decided to deploy a cluster of blade servers powered by Dual-Core Intel® Xeon® processor 5100 series to run Windows Compute Cluster Server 2003.

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Arcangelo Schena  
Commercial Director  
Cimes

The decision to implement this 64-bit multiprocessor and multicore system was made based on three key features:

- First, the new system offered the same performance levels as the alternative—and more expensive—options.
- Second, it could be easily and quickly deployed using standard Windows technologies.
- And, third, the new system was compatible with other computer software, achieving maximum computing potential through its compatibility and flexibility.

Arcangelo says: “The Windows environment provides us with specific facilities and dedicated resources, as well as full, efficient support.”

The new cluster is based on Dell™ PowerEdge™ 1950 blade servers—specifically designed to reduce complexity—on Windows Compute Cluster Server 2003, and is combined with 16 computing units. Each server combines two Dual-Core Intel® Xeon® processor 5100 series. This allows the 16 processors to provide peak power of 190 gigaflops, which provides the required capacity to fully use parallel simulation applications such as Ansys, MSC Nastran, LSTC LS Dyna, and Altair Radioss.

Arcangelo says: “We have six servers in an expandable chassis—Active Directory® services are linked to the main server node, which administers and allocates processing across the four servers functioning as a cluster using a private high-speed network.” Based on Intel® Core™ Microarchitecture—extending industry-leading, energy-efficient philosophies—the new multiprocessors deliver higher performance levels for applications.

## Benefits

Combining Windows Compute Cluster Server 2003 with Dual-Core Intel® Xeon® processor technology, Cimes can now better anticipate and provide for its customers’ rapidly expanding computing needs. The solution offers an efficient, cost-effective, and flexible means of managing a diverse client portfolio and its range of digital simulation needs. Arcangelo says: “An engineer can now control a project throughout its various stages—collecting files from the client, scheduling processing on the computer, and transmitting the results.”

With the solution, Cimes has upgraded its computing capabilities, which has helped maximise engineers’ productivity, improve response times, and capitalise on operational and product efficiency.

Arcangelo says: “This tool accepts the engineers’ requests in real time, and we can work simultaneously on several models using different software, depending on their power constraints and respective deadlines.”

Using the new computing system, Cimes engineers can operate efficiently, achieving optimum use of multiprocessor computing software.

- Engineers have reduced simulation times by 80 per cent.
- Engineers have significantly increased productivity, programmability, and autonomy.
- Cimes has acquired a competitive advantage that is driving its customers’ business prospects and expanding the company’s market potential.
- The 64-bit multiprocessor system driver has saved training costs and users’ time because it is easy to install and compatible with familiar software.
- Production and operating costs have been considerably reduced.
- The new production schedule allows greater flexibility and reactivity.

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- Using the Dual-Core Intel® Xeon® processor 5100 series, high performance levels are being delivered for applications while reducing electricity consumption, which means the company can obtain maximum benefit from using compatible software including Ansys, Nastran, and Radioss.
- Windows Compute Cluster 2003 is making it possible to share power through automated processes that manage work files.
- Dell™ PowerEdge™ 1955 blade servers are easily managed because of increased functionality.
- The new computing system offers one of the best price/performance ratios on the market.
- Already having a Windows environment, Cimes found the new system easy to install and use.
- With the 64-bit multiprocessor system, data is quickly retrieved, processed, and formulated.

## Intel and Microsoft Case Study

Released: November 2007



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